



SERVICE MANUAL

SX-9100H
SX-9100HB

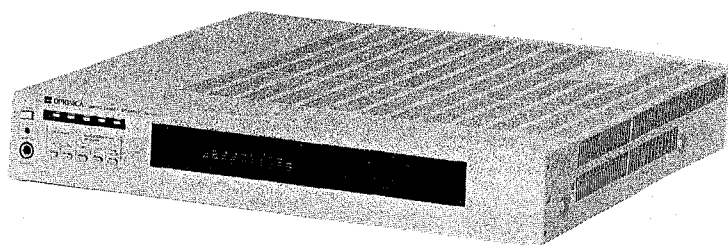


PHOTO: SX-9100H

STEREO POWER AMPLIFIER

MODEL
SX-9100H
(Silver Panel)

SX-9100HB
(Brown Panel)

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SHARP CORPORATION OSAKA, JAPAN

SPECIFICATIONS

Power source: AC 110/220/240 V, 50/60 Hz
 Power consumption: 900 W
 Semiconductors: 26-ICs (Integrated Circuit)
 26-Transistors
 30-FETs
 36-Diodes
 6-LEDs (Light Emitting Diode)
 Dimensions: Width: 430 mm
 (16-15/16 inch)
 Height: 75 mm
 (2-31/32 inch)
 Depth: 447 mm
 (17-5/8 inch)
 Weight: 14 kg (30.86 lbs.)
 Circuit type: All FET pure complementary DC
 circuitry

Continuous power output (at 1 kHz):
 2 x 130 W/4 ohms, Both channels driven,
 0.005% distortion
 2 x 90 W/8 ohms, Both channels driven,
 0.005% distortion

Continuous power output (20 Hz to 20 kHz):
 2 x 110 W/4 ohms, Both channels driven,
 0.015% distortion
 2 x 80 W/8 ohms, Both channels driven,
 0.015% distortion
 Intermodulation: 0.005% at rated power
 0.005% at 40 W output
 Damping factor: More than 100
 (at 1 kHz, 8 ohms)
 Power bandwidth: 10 Hz to 50 kHz, at 0.09%
 distortion 65 W
 Frequency response: DC to 100 kHz +0 dB
 -1.5 dB
 Input sensitivity and input impedance:
 800 mV/22K ohms

Specifications of this model are subject to change without prior notice.

LAYOUT OF PARTS

1. Power On/Off switch

2. Switch indicator

3. Audio spectrum indicator

4. Output power indicator

5. Power/protection indicator

6. Headphone socket

7. Speakers selector

8. Audio spectrum indication selector
9. "A" speaker terminals

10. Direct inputs

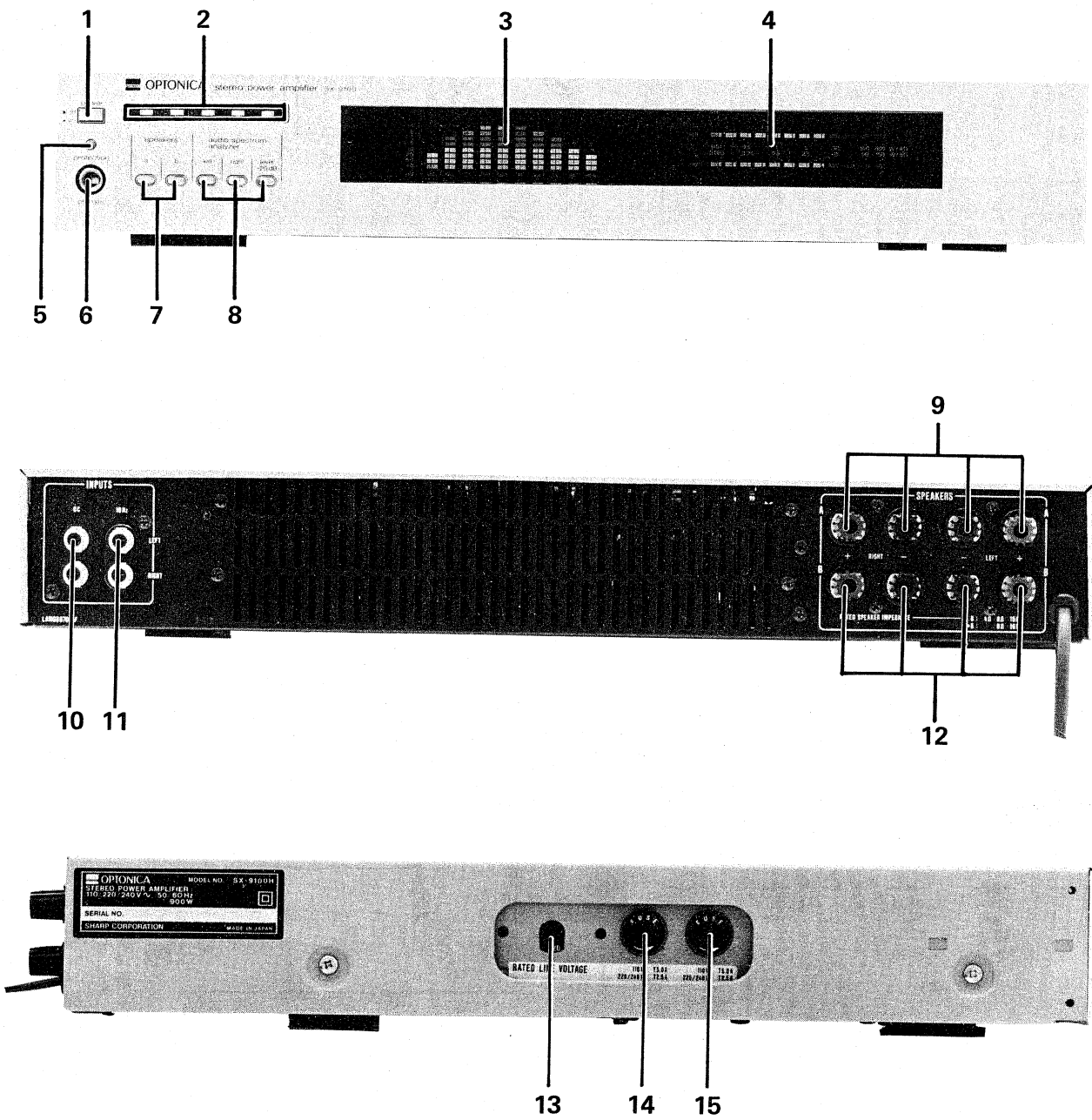
11. 10 Hz inputs

12. "B" speaker terminals

13. AC line voltage selector

14. Right channel AC line fuse holder

15. Left channel AC line fuse holder



AC MAINS VOLTAGE SELECTOR/FUSE REPLACEMENT

Check the setting of the voltage selector on the left side panel before plugging in the AC power cord. (If the unit has already been plugged in, unplug it and check the voltage selector.) Adjust the voltage selector as necessary to match the AC power supply of the area in which the SX-9100H/HB is to be used. Our

factory carries out the setting in advance to suit each destination and uses the fuse of capacity available there. Further adjustment is therefore necessary only when the unit is used in other countries than the original destination.

1. VOLTAGE SELECTOR ADJUSTMENT

(Refer to Figure 4-1)
The voltage selector is located on the side panel of the SX-9100H/HB. If adjustment is necessary, use a screwdriver to turn the selector in either direction until the correct voltage level shows in the window next to the adjustment screw.

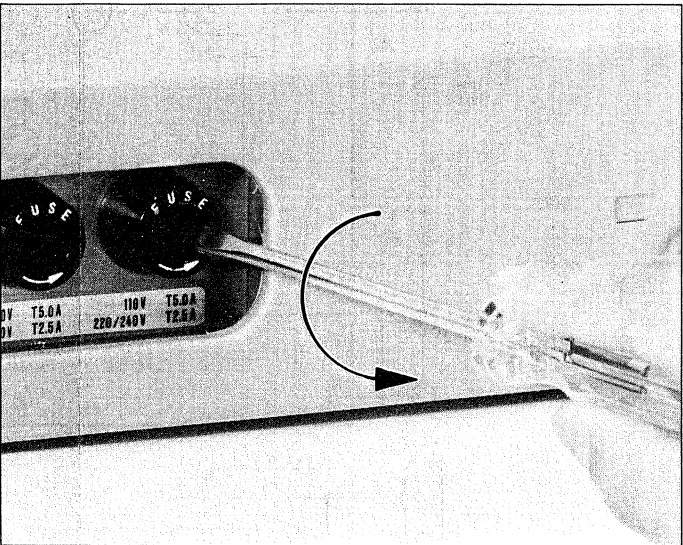


Figure 4-1

2. FUSE REPLACEMENT (Refer to Figure 4-2)
Use the fuse of T5A for setting at 110 V and of T2.5A for setting at 220 V or 240 V. Leave the change of fuse to a qualified technician as it is dangerous.

Warning:
The power supply cord should be removed from AC outlet without fail before changing the fuse.

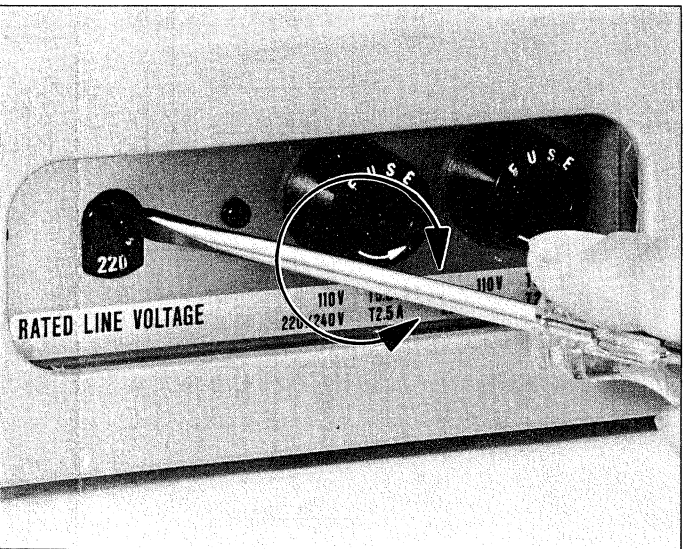


Figure 4-2

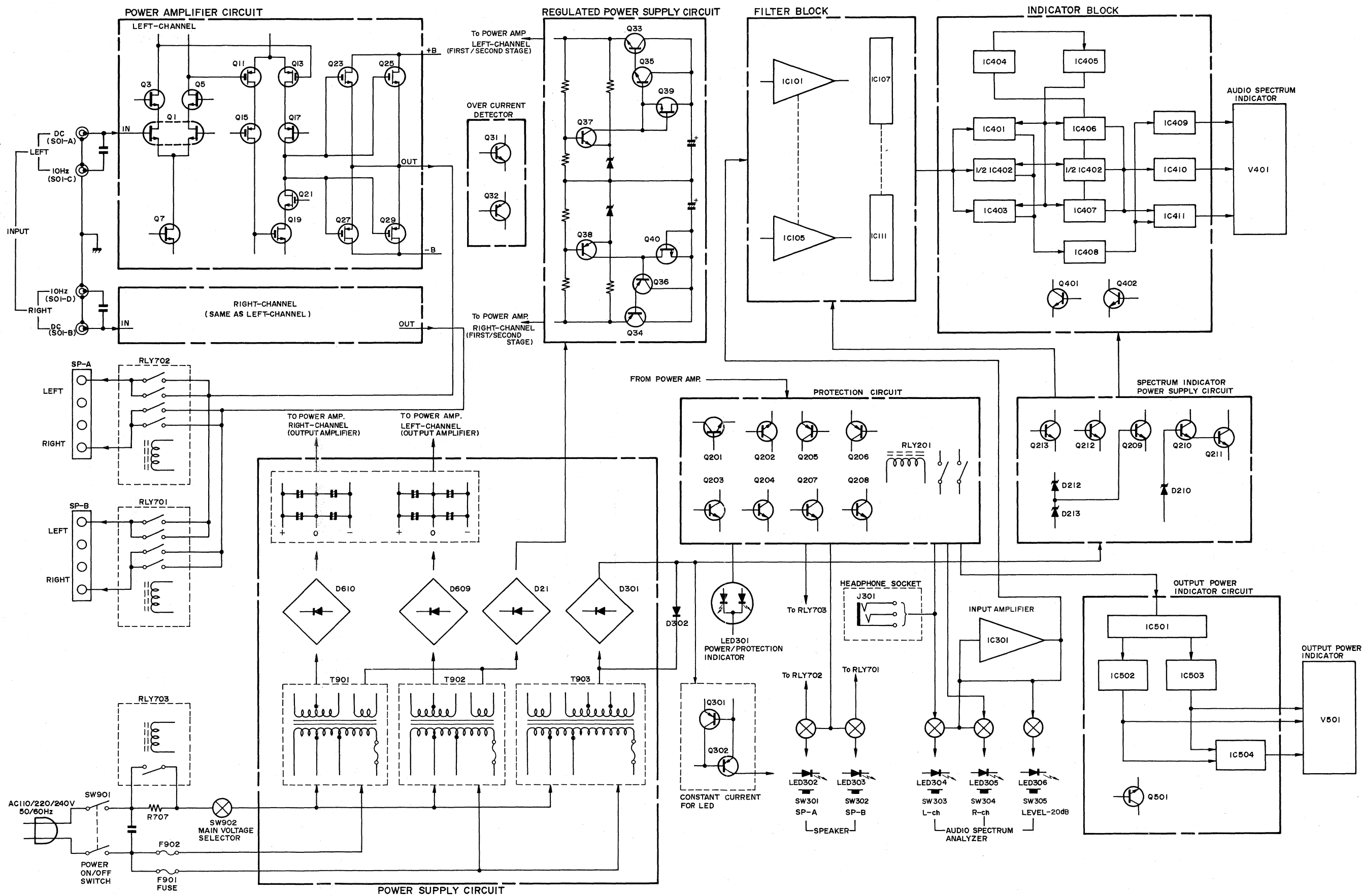


Figure 5 BLOCK DIAGRAM

CIRCUIT DESCRIPTION

1. POWER AMPLIFIER SECTION

Employing FETs (Field Effect Transistors) anywhere in it, the power amplifier section is made a direct current (DC) operating unit which comprises two differential amplifiers, the first-stage one and the second-stage one, and the output of which represents a symmetrical complementary circuit. Especially in both differential amplifiers are used dual-type FETs which offer very high gm value and ultra low noise effects.

The signal leaving the input socket (SO1A-D) is applied to the first-stage differential amplifier made of dual-type FET (Q1 or Q2) where it is boosted for the first time; next passing through the first-stage cascode amplifier made of high-voltage withstand junction-type FETs (Q3 and Q5, or Q4 and Q6), it enters the second-stage differential amplifier made of P-channel MOS FETs (Q11 and Q13, or Q12 and Q14) where it is again boosted; further it is applied to the second-stage cascode amplifier formed by FET (Q19 or Q20) where it is subjected to a phase inver-

sion; finally it initiates FET (Q21 or Q22) to drive the output amplifier consisting of FETs (Q23, Q25, Q27 and Q29, or Q24, Q26, Q28 and Q30), into conduction.

To the source of dual-type FET (Q1 or Q2) of the first-stage differential amplifier is fed a constant current which is assured by FET (Q7 or Q8) and Zener diode (D1 or D2) making it less affected by the ambient temperature. Each cascode amplifier in both stages is intended to allow the circuit to accept quite swiftly the input signal however instantaneous it may be, and to assure its output of a characteristic of low noise/low distortion as well.

What's more, FETs (Q11 and Q13, or Q12 and Q14) in the second-stage differential amplifier are connected to the same one heat sink, as a result of which all of them are made quite equal in their output characteristic. The output amplifier is made such a symmetrical complementary circuit that it incorporates eight power MOS FETs (Q23 thru Q30), the four of which acts on the right channel while the other four, on the left channel.

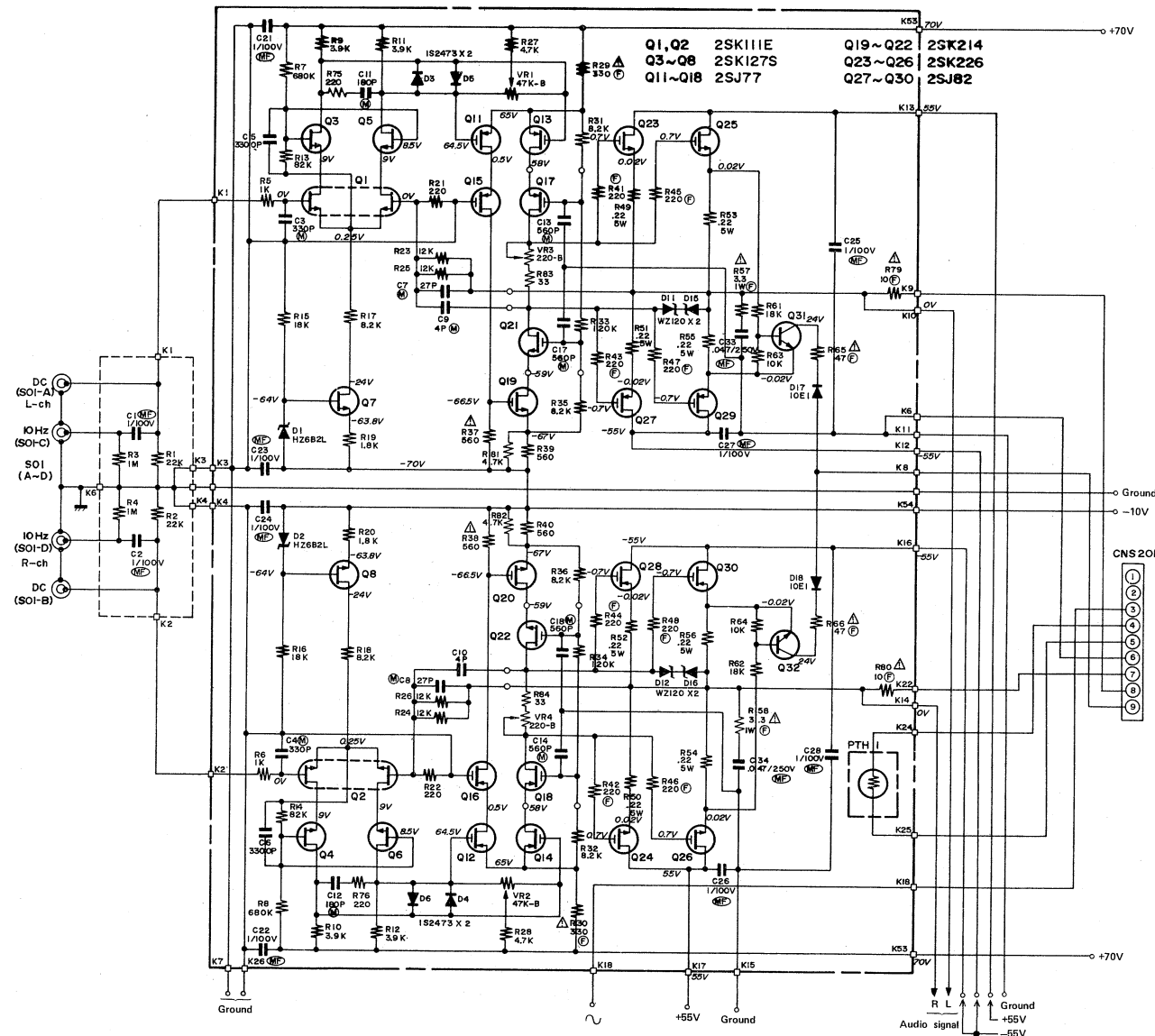
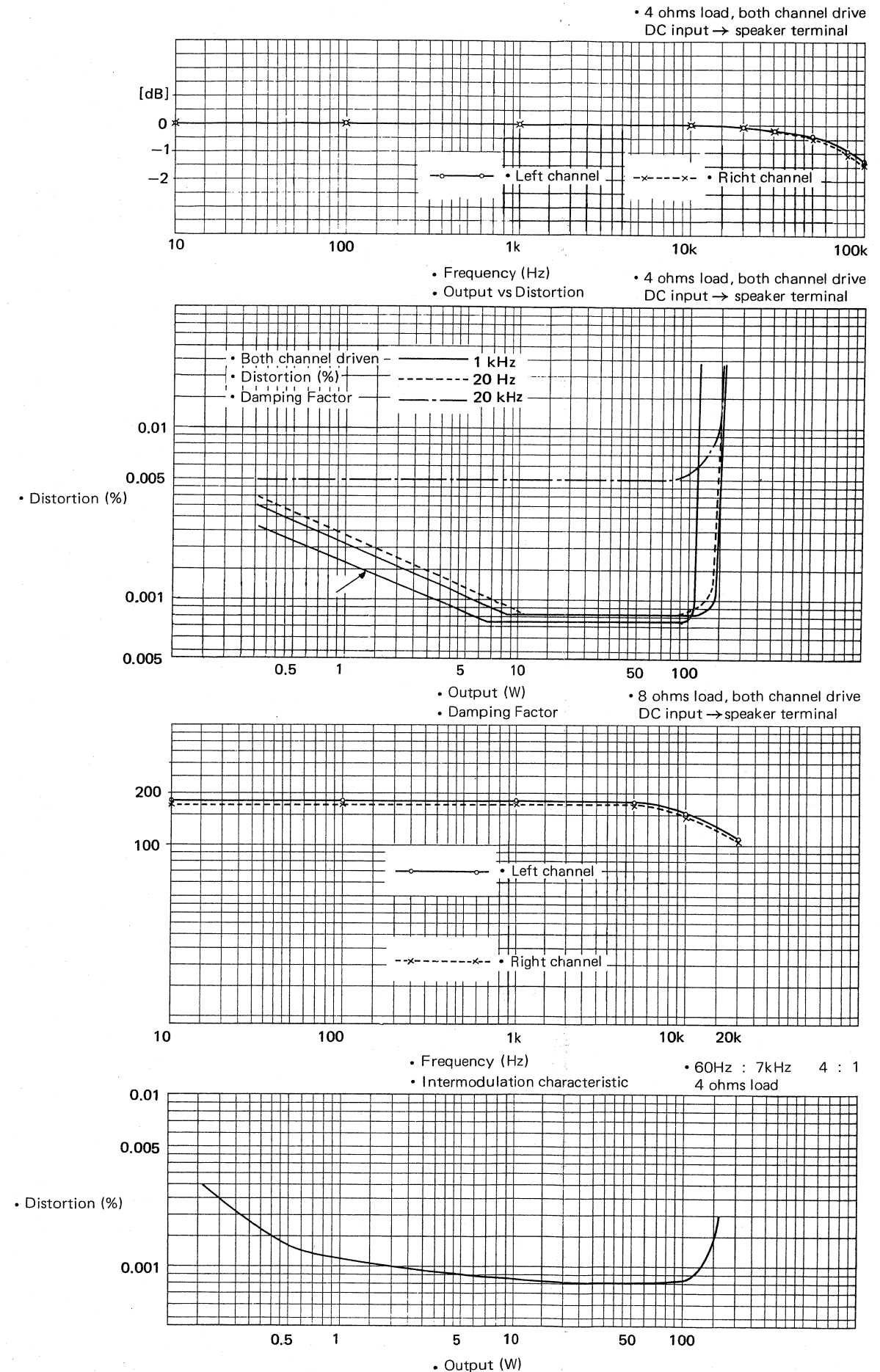


Figure 7 POWER AMPLIFIER CIRCUIT

DATAGRAPH



2. POWER SUPPLY CIRCUIT

The power supply circuit consists of three transformers (T901, T902 and T903); the T901 and T902 are of a toroidal type and their output is applied to the power amplifier section which requires most power consumption, and separately for the right and left channels; the T903 feeds power to the other circuits. AC power from the transformer (T901 or T902) is converted by the bridge rectifier circuit made of diode (D601 or D602) to become DC power, then it is delivered to the smoothing circuit formed by electrolytic capacitors (C603, C604, C607 and C608, or C601, C602, C605 and C606) where it is deprived of its ripple components, and enters the output amplifier in the power amplifier section.

Another AC power from the secondary of the transformer (T901 or T902) is also converted by the bridge rectifier circuit made of diode (D21) to become DC power charging the electrolytic capacitors (C41 and C42); a positive side of this charge voltage is applied to the constant voltage circuit formed by transistors (Q33, Q35 and Q37) and FET (Q39) while a negative (−) side of it, to the constant voltage circuit formed by transistors (Q34, Q36 and Q38) and FET (Q40). The transistor (Q37 or Q38) serves the role of detecting the output voltage; say, it aims at a comparison of the reference voltage which is made steady by Zener diode (D19 or D20), with the voltage available partly at resistors (R67 and R69, or R68 and R70). For instance, as the positive (+) side of output voltage rises, so does the voltage at the base of transistor (Q37), and a current is thus caused and if flows from the collector of transistor (Q37) into the limiter circuit. As a result, since the voltage at the source of FET (Q39) falls, the voltage at the base of transistor (Q33) falls too, so that the resistance at the collector-emitter junction of transistor (Q33) increases to cause a fall of the output voltage.

On the other hand, if the positive (+) side of output voltage falls, the circuitry motion reverse to the abovementioned holds true.

The output of these constant voltage circuits is then fed to both the first-stage amplifier and the second-stage amplifier.

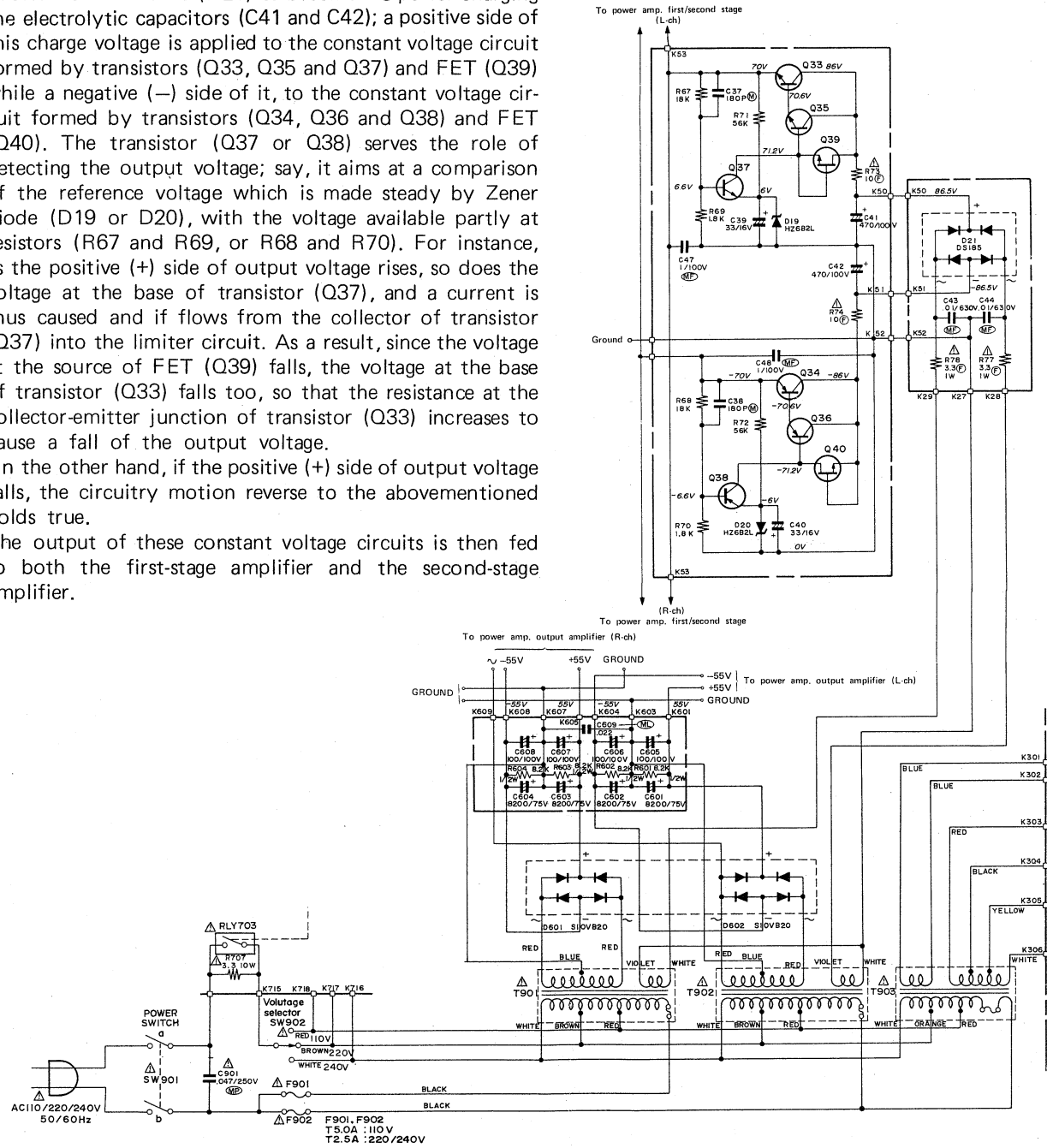


Figure 9 POWER SUPPLY CIRCUIT

3. PROTECTION CIRCUIT

The protection circuit used in this set is so designed as to function in the following instances,

- (1) It protects the speaker against possible shock noise caused when the power switch is turned on.
- (2) It protects the speaker against possible shock noise caused when the power switch is turned off.
- (3) It functions when DC voltage is generated at the speaker terminal (for instance, when DC voltage gets unbalanced due to a trouble inside the amplifier).
- (4) In the case of the temperature of heat sink increasing abnormally.
- (5) The speaker terminals are shorted and the load impedance is lowered (for instance, when several speakers are connected in parallel to the amplifier).

The transistor (Q201) is to remove powersupply ripples applied to the protection circuit. The transistors (Q204 and Q205) are usually kept off in the normal state but it turns on if too large current (due to shortage of the speaker terminals, for instance) runs into the output

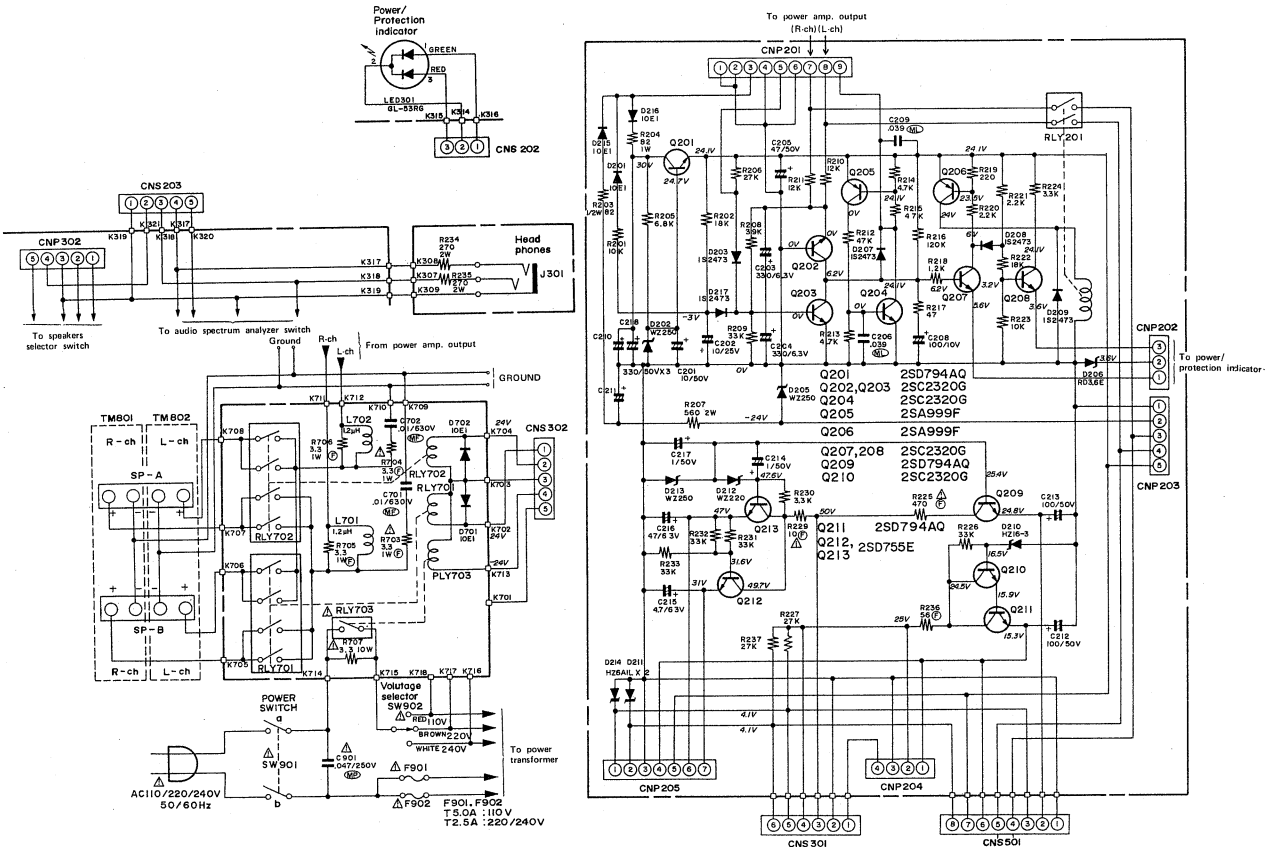


Figure 10 PROTECTION CIRCUIT

amplifier of the power amplifier section; this turning on will cause a current to apply it to the protection relays (RLY701 and RLY702) disconnecting the output amplifier and the speaker terminals from each other. The transistors (Q207 and Q208) are Schmidt trigger circuit, and they make the protection indicator LED (D301) light up in red or in green according to whether the protection circuit is in action or in stop.

The relay (RLY201) is intended to control the signals applied to the headphone circuit and to the output indicator circuit; in the above cases (1) thru (5), it functions, together with the relays (RLY701 and RLY702), to protect those circuits against damage.

The relay (RLY703) and resistor (R707) work in this way: instantly when the power switch is turned on, since the relay is still open then, the possibly resultant rush current is blocked out by the resistor; only about 0.2 second after, the relay gets closed and it carries the desired current into the succeeding circuit.

■ OUTPUT POWER INDICATOR (V501) AND AUDIO SPECTRUM INDICATOR (V401)

These indicators are both of fluorescent lighting tube and the following will discuss their functions individually.

• OUTPUT POWER INDICATOR (V501)

The construction of this output power indicator is as shown in Fig. 11-1. It consists of three color segments; the red ones belong to the plates (P1, P2, P13 and P14); the yellow ones, to the plates (P3, P4, P15 and P16); the green ones, to the plates (P5 thru P12, and P17 thru P24): it further includes cathode (F) and grid (G). It is so designed that DC voltage of approx. 4 V is applied to the cathod (F) while DC voltage of approx. 15 V, to the grid (G); hence the pulse signal of approx. 15 V is fed to the plates (P5 thru P12, and P17 thru P24) while the pulse signal of approx. 25 V, to the plates (P1 thru P4 and P13 thru P16). As a result, the respective plates become "High" level in potential so that the segments belonging to them will light up; the lighting continues as long as the potential is at "High" level.

• AUDIO SPECTRUM INDICATOR (V401)

The construction of this audio spectrum indicator is as shown in Fig. 11-2. It consists of three color segments; the green ones belong to the plates (P1 thru P4); the yellow ones, to the plates (P5 and P6); the red ones, to the plates (P7 and P8): it further includes cathode (F) and grids (G1 thru G10) both of which form a matrix circuit together with the plates (P1 thru P8), unlike the said the output power indicator (V501). It is so designed that DC voltage of approx. 4 V is applied to the cathod (F); pulse signal of approx. 32 V, to the grids (G1 thru G10); pulse signal of approx. 32 V, to the plates (P1 thru P4); pulse signal of approx. 45 V, to the plates (P5 thru P8): therefore, the segments belonging to the plates will light up. If the pulse signal applied, for instance, to the grid (G10) increases to "High" level in potential, the pulse signal supplied to the plates (P1 thru P8) increases to "High" level too, so that the segments belonging to the plates will light up: the lighting keeps on as long as the potential is at "High" level. Although the segments light up from one to another in sequence, they, actually, seem to light up almost simultaneously because their speed is remarkably too high for the human eyes to experience the time lag of their lighting up.

4. OUTPUT POWER INDICATOR CIRCUIT

The output power indicator circuit is composed of integrated circuits (IC501 thru IC504) and transistor (Q501), and it drives the output power indicator (V501) to tell the operator a variety of output power level of the unit. The signal leaving the power amplifier is applied to pin ④ (left-channel signal input) or pin ⑤ (right-channel signal input) of the integrated circuit (IC501); there it is rectified and logarithmic-compressed to become DC signal going out of pin ② or ⑧. This DC signal is next passed on via variable resistor (VR501 or VR502) to pin ② of the integrated circuit (IC502 or IC503); there it is converted into one of 12 different digital signals according to its input level here, going out of one of pins ③ thru ⑭ having approx. 15 V in it. The output from either of pins ⑦ thru ⑭ is coupled

to the plates (P17 thru P24, and P5 thru P12) of the output power indicator (V501) to light the green segments; the output from either of pins ③ thru ⑥ is applied to pins ① thru ⑧ of the integrated circuit (IC504) to increase to approx. 25 V, then it enters the plates (P1 thru P4, and P13 thru P16) of the output power indicator (V501) to light up both the red and yellow segments. The transistor (Q501) is intended to work for about 5 seconds after the power switch has been turned on, so as to reduce the voltage applied then to the grid (G) and, thereby to prevent a normal indication of the output power indicator (V501) from being affected by undesired noises or the like. The same holds true for the case where the power switch is turned off.

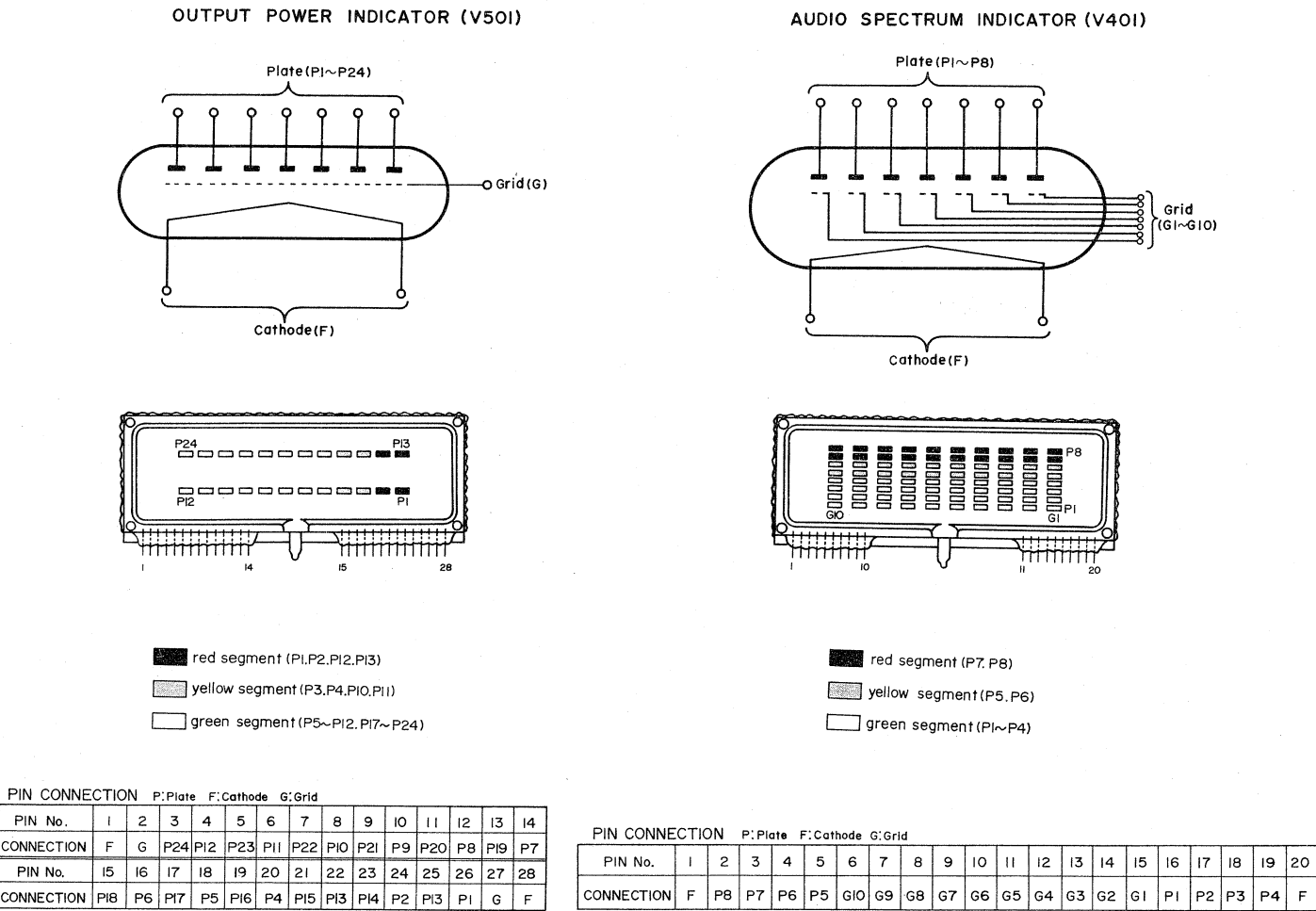


Figure 11-1 OUTPUT POWER INDICATOR (V501)

Figure 11-2 AUDIO SPECTRUM INDICATOR (V401)

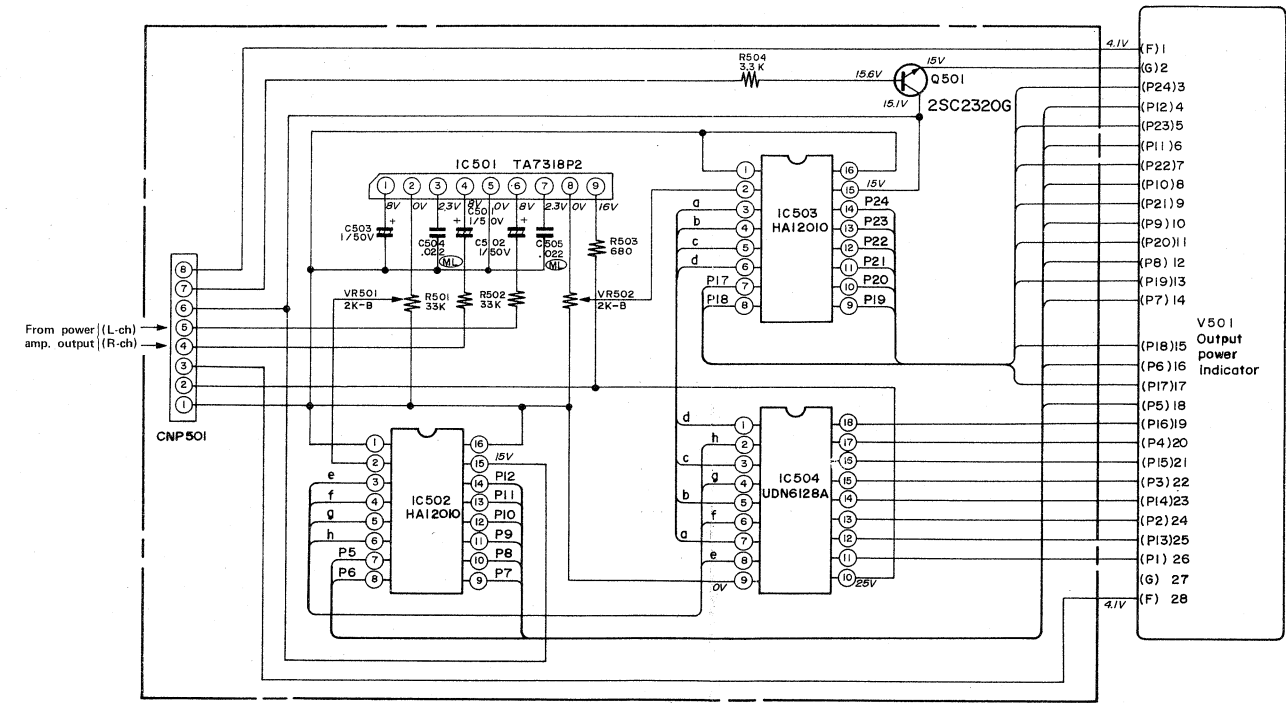


Figure 12 OUTPUT POWER INDICATOR CIRCUIT

5. AUDIO SPECTRUM INDICATOR CIRCUIT

The audio spectrum indicator circuit consists of input amplifier section, filter block and indicator block, and it serves to drive the audio spectrum indicator (V401) to tell the operator of what frequencies the output signal consists.

5-1. Input Amplifier Section (Refer to Figure 13-2)

The input amplifier consists of integrated circuit (IC301) and resistors (R308 thru R312), and it serves the role of a buffer for the next stage, the filter block.

The prime functions of it are as follows:

- Coming out of the power amplifier, the signal is here converted into a low impedance signal, then it is applied to the filter block.
- When the audio spectrum indication selector switches "left" (SW303) and "right" (SW304) are both turned on, the signals of both channels are here mixed together, then applied to the filter block.
- A part of the signal coming from the power amplifier is applied not only to the headphone circuit via pins ③ and ④ of the socket (CNS203) but to pin ⑥ of the integrated circuit (IC301) via the audio spectrum indication selector switch (SW303 or SW304) as well; in the latter case, the signal is converted into a low impedance signal and applied to the filter block through pin ④ of the plug (CNP303).

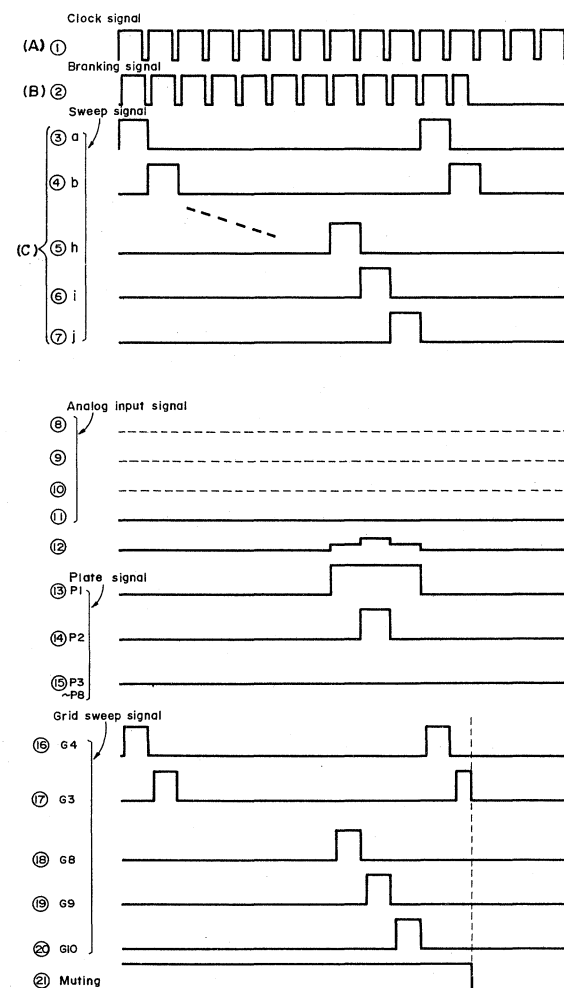
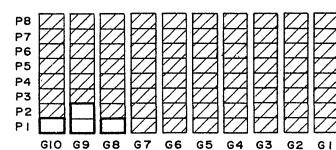


Figure 13-1 SPECTRUM INDICATOR TIMING CHART

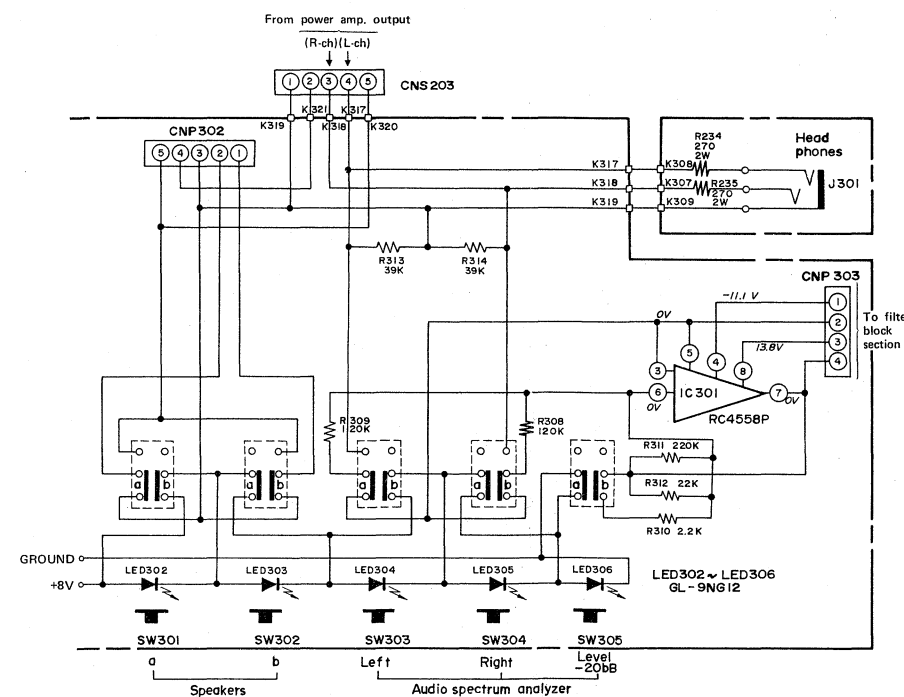


Figure 13-2 INPUT AMPLIFIER SECTION

5-2. Filter Block Section (Refer to Figure 13-1, Figure 14)

The filter block is composed of integrated circuits (IC101 thru IC111), resistors (R101 thru R159), capacitors (C101 thru C173) and variable resistors (VR101 thru VR110), and it is here that the input signal is divided into signals of 10 different frequency-bands (in the range from 30 Hz to 16 kHz), rectified and logarithmic-compressed before entering the next circuit. Passing through pin ④ of the socket (CNS303), the input signal is first applied to the filter circuit composed

of resistors (R101 thru R142), capacitors (C101 thru C154) and integrated circuits (IC101 thru IC105) where it is divided into signals of 10 different-frequency bands, and then to the pins ④ and ⑥ of the integrated circuits (IC107 thru IC111) via the variable resistors (VR101 thru VR110); there each signal is rectified and logarithmic-compressed to become DC voltage in direct accordance with its before-designated band, entering the next block via the socket (CNS401).

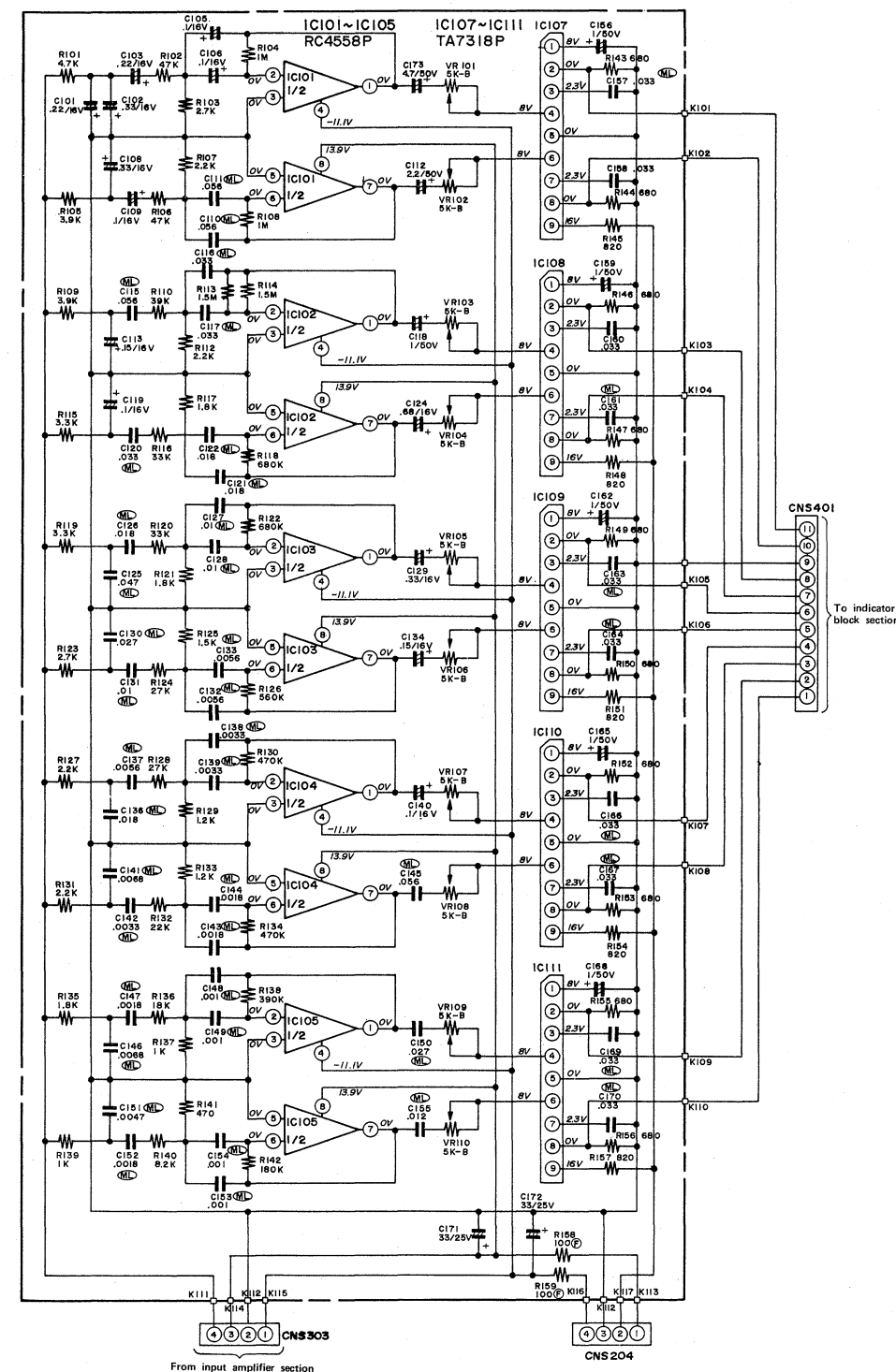


Figure 14 FILTER BLOCK SECTION

5-3. Indicator Block Section (Refer to Figure 13-1, Figure 15)

The indicator block comprises integrated circuits (IC401 thru IC411) and transistors (Q401 and Q402), through which the input signal is converted into a digital signal to light up the audio spectrum indicator (V401).

The integrated circuit (IC404) consists of inverter gates (1 thru 3), and clock pulse (A) is here generated and applied to pin ⑭ of the integrated circuit (IC405) where it is divided into 10 different pulse signals ("a" thru "j") going out of the circuit one after another; ("a" thru "d") are applied to the integrated circuit (IC407); ("e" and "f"), to the integrated circuit (IC402 1/2); ("g" thru "j"), to the integrated circuit (IC406). The integrated circuits (IC406, IC407 and IC402 1/2) from AND gate; to one input of it is applied the pulse signal from the integrated circuit (IC405) while to the other input, the blank signal (B) from the integrated circuit (IC404) of inverter gate. Only if these two inputs go to "High" level at a time, does there appear an output entering the integrated circuits (IC410 and IC411); there it is boosted to approx. 30 V while it has been kept at approx. 12 V to 15 V, then fed to the grids (G1 thru G10) of the audio spectrum indicator (V401).

Meanwhile, 10 different DC signals which have been produced by the preceding circuit (the filter block) are now delivered via the plug (CNP401) to the integrated circuits (IC401, IC402 1/2 and IC403).

Either of the integrated circuits (IC401, IC402 1/2 and IC403) comprises 4 gates in the same way, and it switches on whenever one of the pulse signals ("a"

thru "j") reaches "High" level. Now, suppose that the potential at pin ① ("j") of the integrated circuit (IC405) goes to "High" level. The gate (1), then, turns on so the signal which has been applied to pin ⑨ of the integrated circuit (IC401) goes out of pin ⑧ of it. The other pulse signals ("a" thru "i") of the integrated circuit (IC405) are also processed in the same way, thereby switching on the gates (2) thru (10) in sequence. Going out of the gates (1) thru (10), the signals are then applied via the resistor (R411) to pin ② of the integrated circuit (IC408) where they are converted into 8 different pulse signals in direct accordance with their input voltage level going out of pins ⑥ thru ⑬ respectively. The outputs of pins ⑥ thru ⑨ are applied to the integrated circuit (IC409) where they are amplified to approx. 45 V entering the plates (P5 thru P8, say, the red and yellow segments) of the audio spectrum indicator (V401); the outputs of pins ⑩ thru ⑬ are amplified to approx. 32 V by the integrated circuit (IC411), then entering the plates (P1 thru P4, say, the green segments) of the audio spectrum indicator (V401).

The transistors (Q401 and Q402) are intended to work for about 5 seconds after the power switch has been turned on so as to reduce the voltage applied to the grids and, hence to prevent a proper indication of the audio spectrum indicator from suffering undesired noises or the like; the same is true for the case where the power switch is turned off.

HEAT PIPE

We shall explain the principles of the movement of Heat Pipe installed in Model SX-9100H.

The major purpose of Heat Pipe is the heat conduction; that is how to conduct the heat generated by Power Transistor as efficiently as possible to the "Fin" part.

As the "Heat in" part is delivered the heat generated by Power Transistor, Fluoro carbon F-11 liquid enclosed therein Pipe is heated and is made evaporated. On the occasion of evaporation, it uses a large quantity of heat as the evaporation heat, and the Fluoro carbon vapour flows towards "Heat out". The vapour transmission is made at sonic speed as the Pipe interior is vacuous.

The vapour at the "Heat out", being radiated by "Fin", is cooled down and due to the increased interior pressure by vapour, F-11 vapour is condensed into liquid. Here, latent heat is radiated. That is, the heat of "Heat in" has been transmitted to "Heat out". Liquid F-11 flows back to "Heat in" by gravity. (In terms of heat, the "Heat out" part is located at higher position than "Heat in".) Thus, the heat is transmitted as latent heat from "Heat in"

to "Heat out" by the evaporation, transmission and condensation of F-11, making circulating close circuit.

SX-9100H Heat Pipe has effectively located the "Fin" part based on the above-mentioned principle, thus Amplifier with big power has been successfully developed. The new technology has broken through the limit of conventional Heat Sink of Aluminium heat conduction, which was only 100 W + 100 W/8 Ω at 100 mm of Set height.

Cautions:

- (1) Avoid using Set slanted or lengthwise, as Heat Pipe conducts heat by the circulation of activating liquid (F-11 for SX-9100H). Otherwise, activating liquid may not flow back from "Heat out" to "Heat in".
- (2) Avoid applying strong force to Heat Pipe. In servicing, Activating liquid leakage may spoil the role as Heat sink.
- (3) Never close radiating hole of Set as a large quantity of heat is being radiated from amplifier of big power. Never mount any other set on SX-9100H.
- (4) During the adjustment, it is recommended for the legs at the bottom of the unit to be kept as high as possible so as to obtain the better heat radiation.

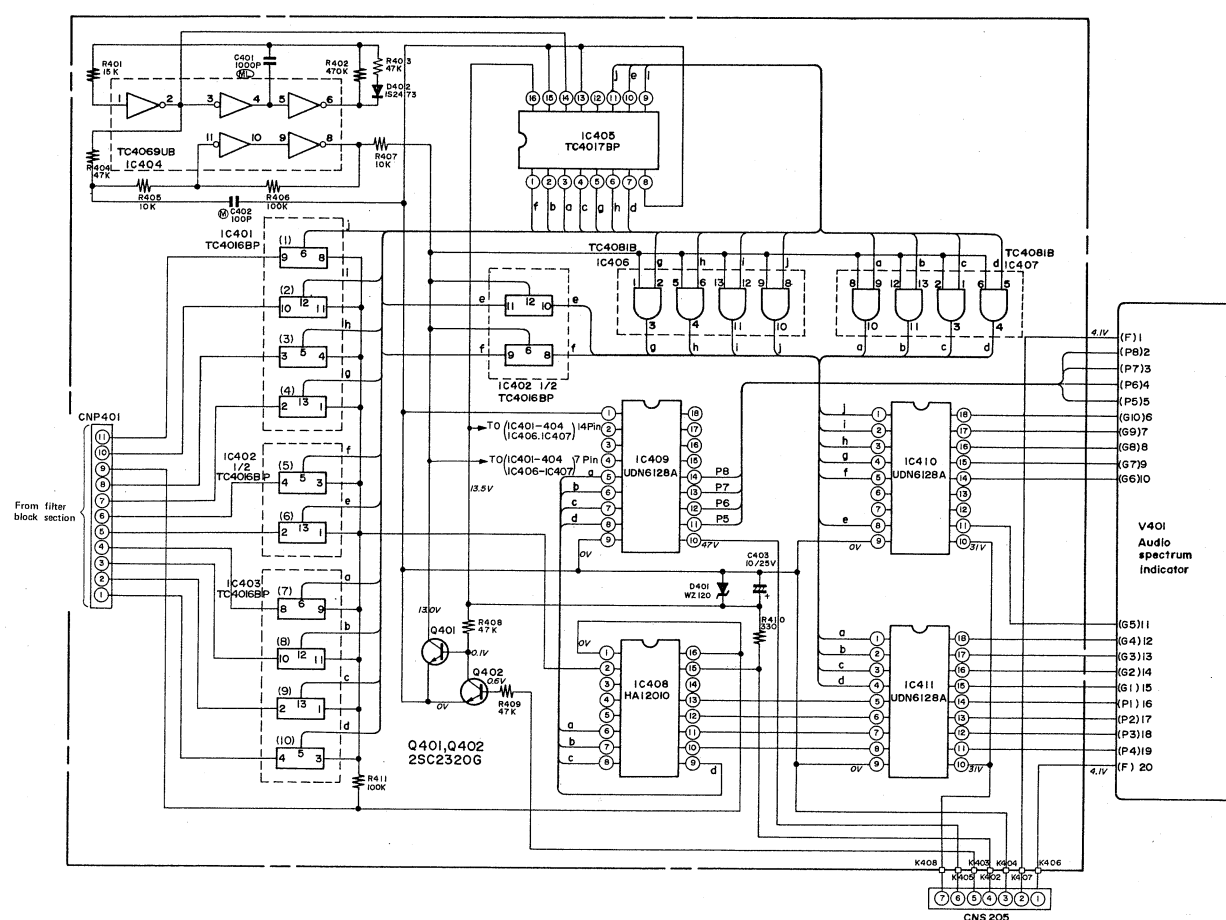


Figure 15 INDICATOR BLOCK SECTION

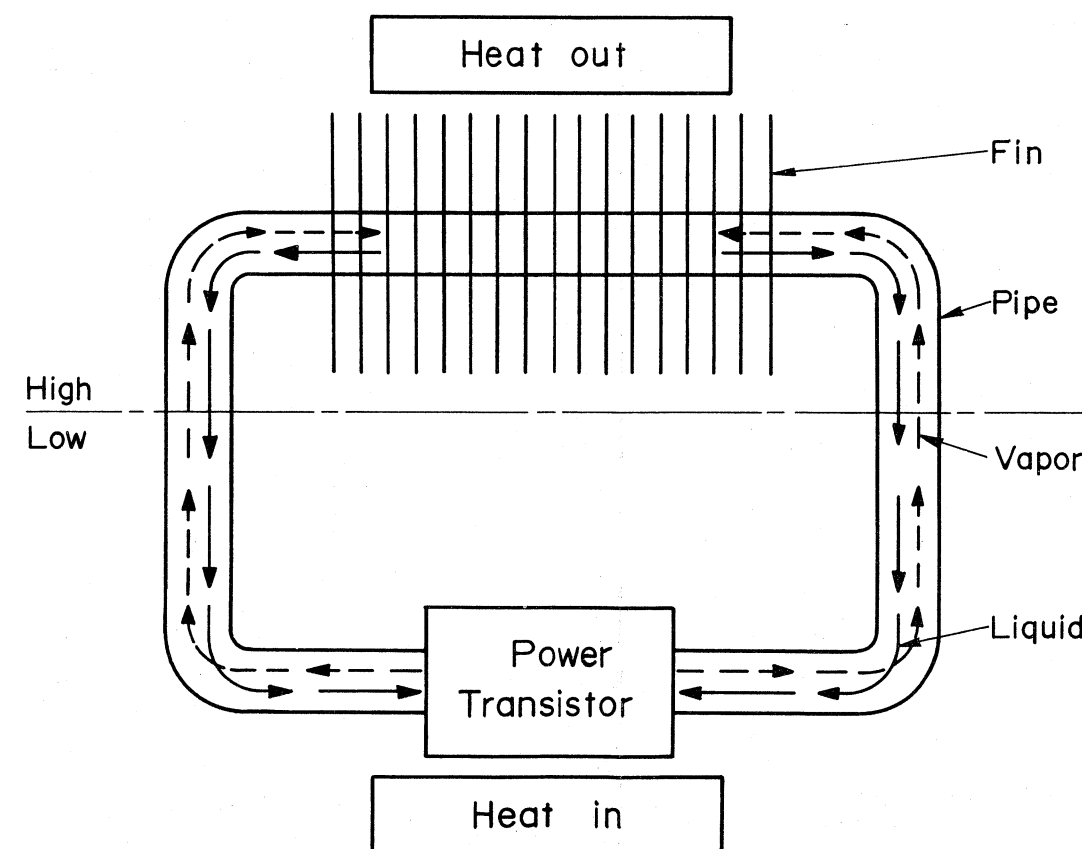


Figure 16 HEAT PIPE

Adjustment of Power Amplifier Section

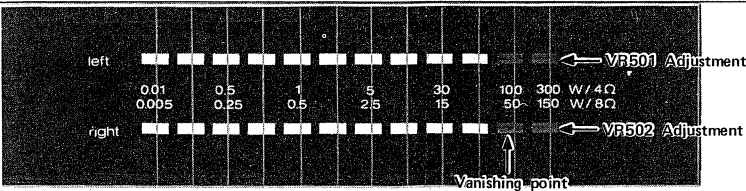
- Instruments necessary for the adjustments:

 - 1. DC millivoltmeter; 2 sets (①, ②)
 - 2. Signal generator; 1 set
 - 3. DC voltmeter; 1 set
- Set the power supply voltage at AC 220 V.
 - Set the speaker selector switch "a" at "on" position.
 - Set the variable resistors (VR1 and VR2) at "mechanical center" position.
 - Bring the variable resistors (VR3 and VR4) to the extreme clockwise position.
 - Connect the road resistor (4 ohm) to the right and left jacks of the speaker terminal A.

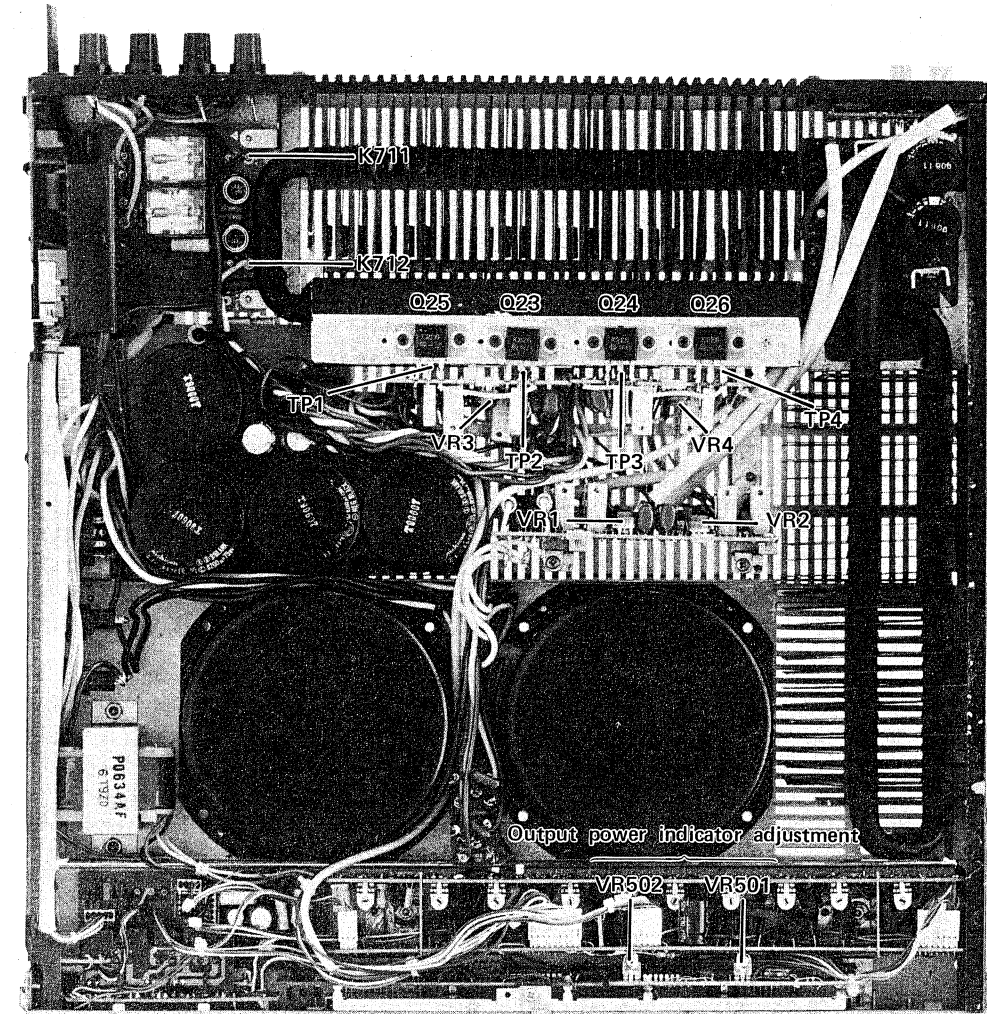
Step	Meter connection	Adjust	Remarks
1	Connect DC millivoltmeter to the speaker terminal "A-left".	VR1	Rotate the semi-variable resistor (VR1) until the meter indicates 0mV.
2	Connect DC millivoltmeter to the speaker terminal "A-right".	VR2	Rotate the semi-variable resistor (VR2) until the meter indicates 0mV.
3	Connect DC millivoltmeter (1) to TP1 and K712; DC milli-voltmeter (2) to TP2 and K712.	VR3	Rotate the semi-variable resistor (VR3) so that the sum of reading values of the two meters will be 44mV. (However, the difference between the two meters must be less than 20mV.)
4	Connect DC millivoltmeter (1) to TP3 and K711; DC milli-voltmeter (2) to TP4 and K711.	VR4	Rotate the semi-variable resistor (VR4) so that the sum of reading values of the two meters will be 44mV. (However, the difference between the two meters must be less than 20mV.)
5	Make sure the voltage of each of the following points is within the range from 10mV to 30mV: Between TP5 and K712; TP6 and K712; TP7 and K711, TP8 and K711.		

Adjustment of Output Power Indicator Circuit

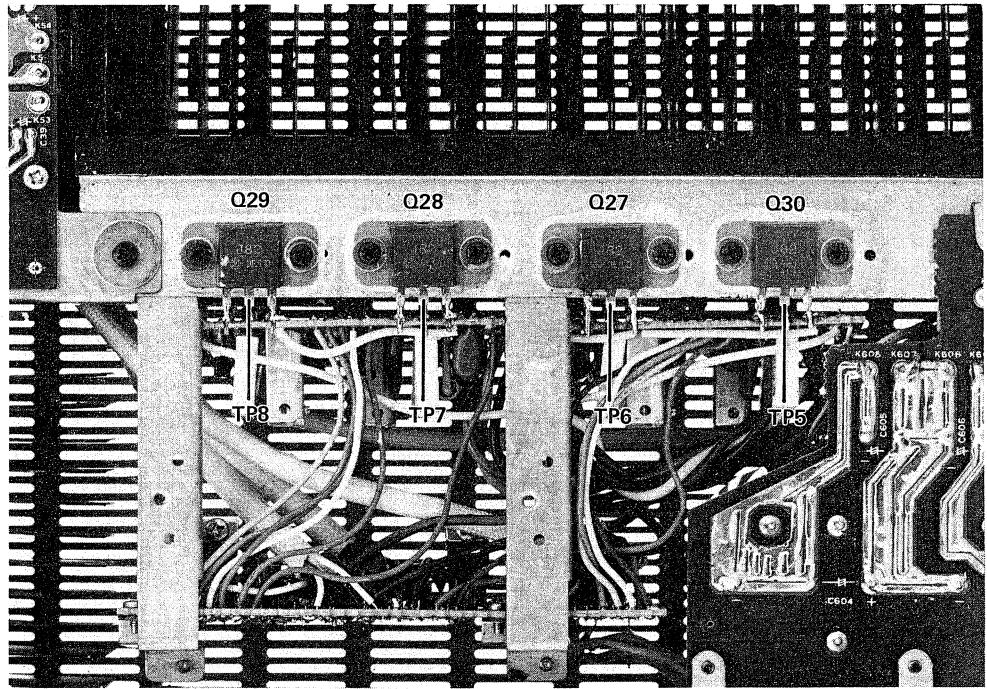
Step	Signal generator		Meter connection	Adjust	Remarks
	Connection	Frequency			
1	Connect signal generator to DC input socket (SO1)-"left".	1kHz	Connect DC volt-meter to the speaker terminal "A-left".	VR501	1. Adjust the output of signal generator until DC voltmeter indicates 19.0V. 2. Rotate the semi-variable resistor (VR501) to a point where the 11th (counted from left) segment (red) of the output power indicator (V501) to display the left-channel power will begin to vanish.
2	Adjust the output of signal generator so that DC voltmeter indicates 20.0V, and see that the 11th segment can light up.				
3	Connect signal generator to DC input socket (SO1)-"right".	1kHz	Connect DC volt-meter to the speaker terminal "A-right".	VR502	1. Adjust the output of signal generator so that DC voltmeter indicates 19.0V. 2. Rotate the semi-variable resistor (VR502) to a point where the 11th (counted from left) segment (red) of the output power indicator (V501) to display the right-channel power will begin to vanish.
4	Adjust the output of signal generator so that DC voltmeter indicates 20.0V, and see that the 11th segment can light up.				



OUTPUT POWER INDICATOR



TOP VIEW

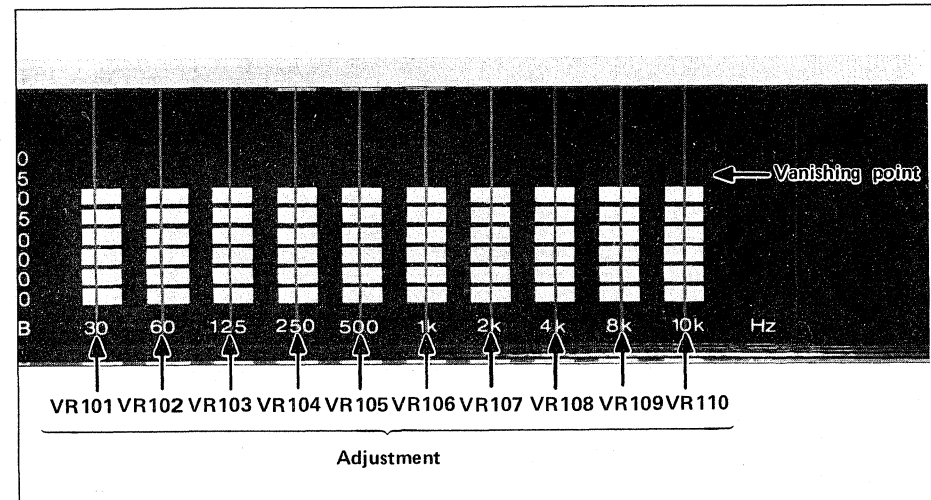


BOTTOM VIEW

Figure 18 ALIGNMENT POINTS

Adjustment of Audio Spectrum Indicator Circuit

Set the "left" switch, the "right" switch and the "level -20dB" switch belonging to the audio spectrum analyzer switch (SW303, SW304, SW405) to "on", "off" and "off" position respectively.



AUDIO SPECTRUM INDICATOR

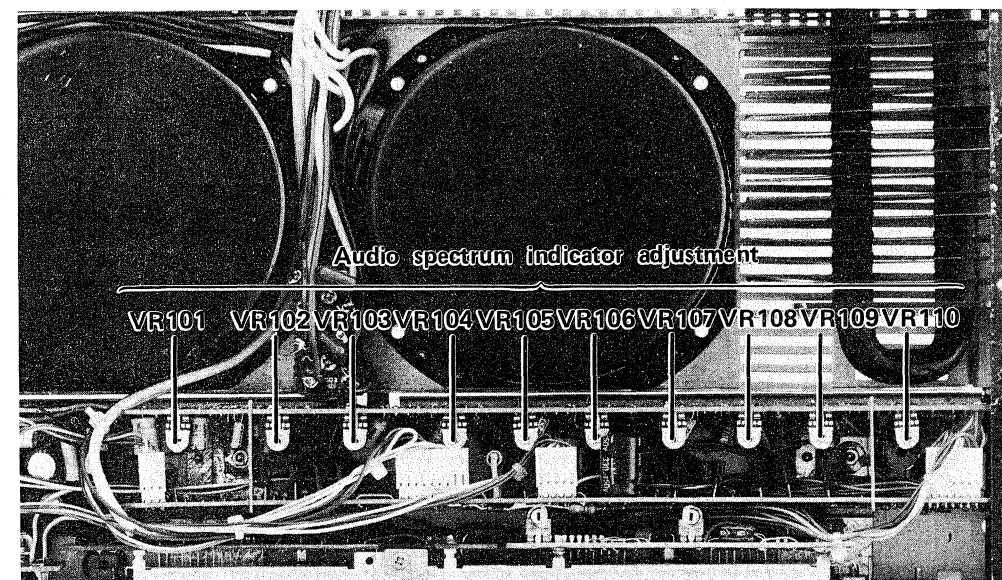
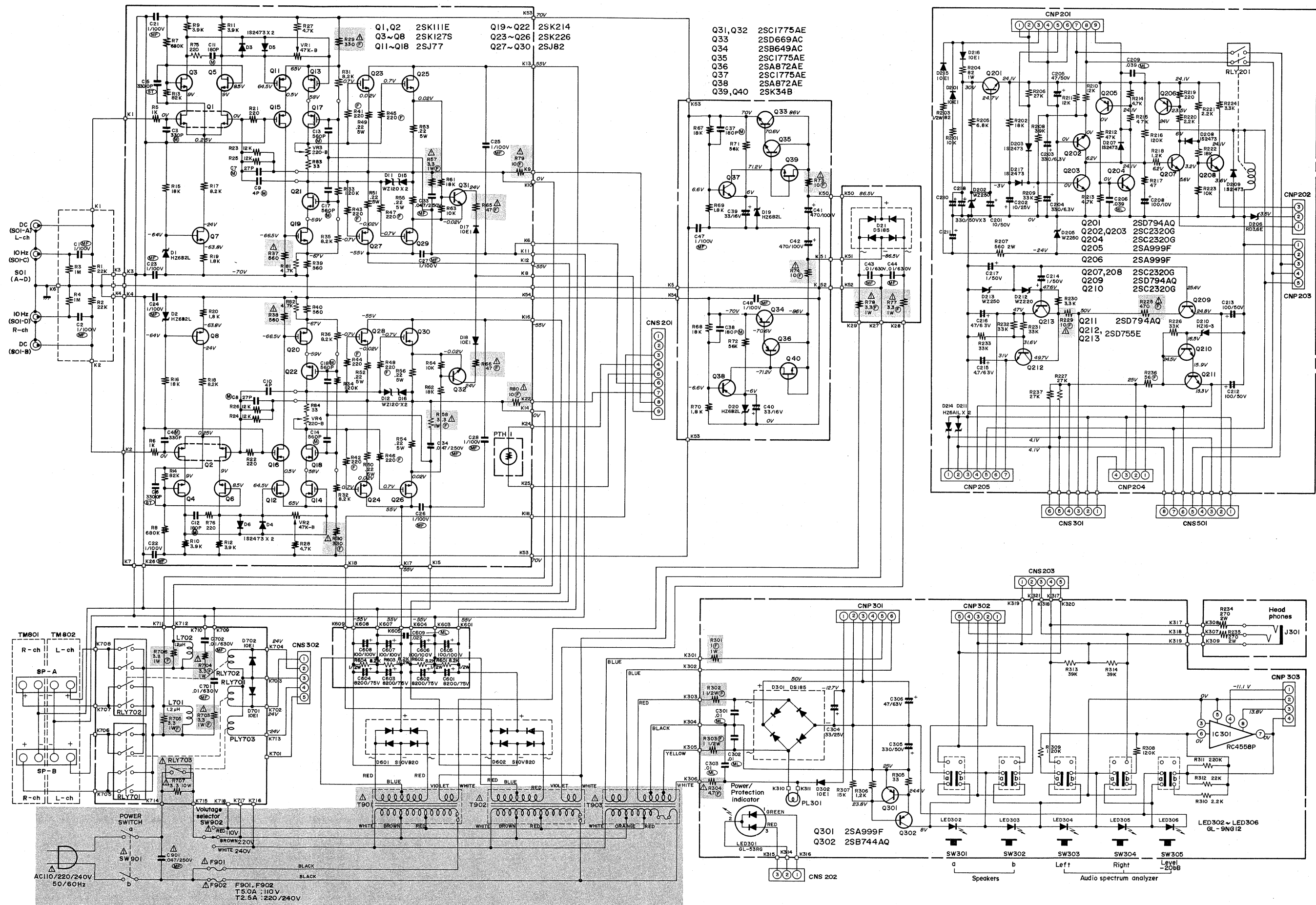


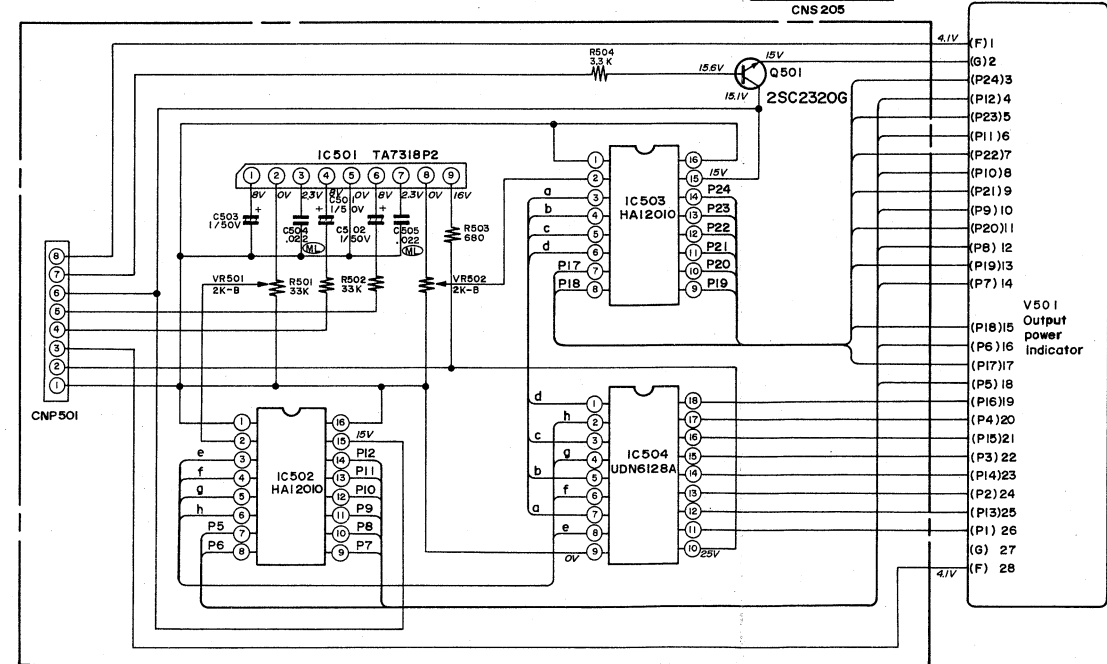
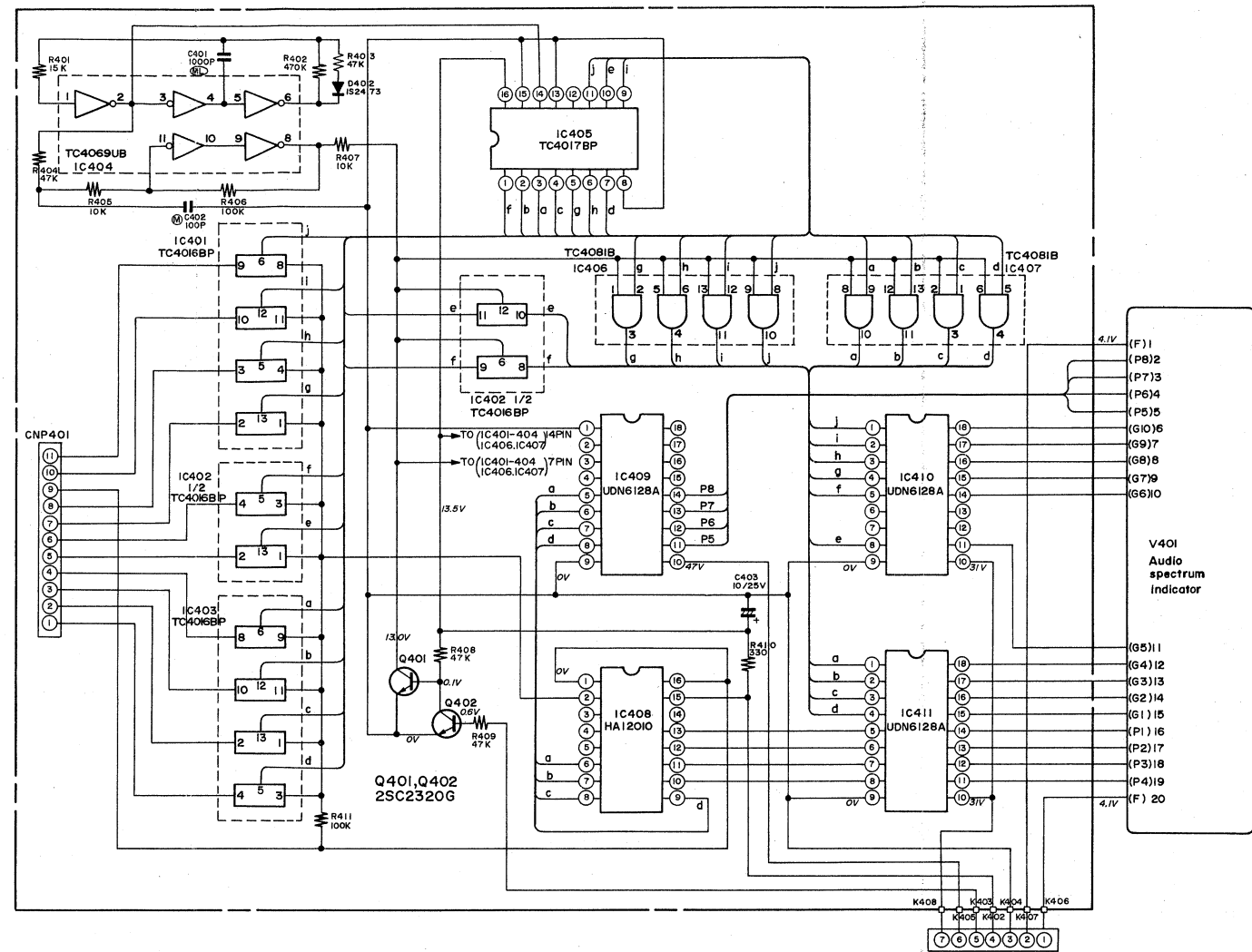
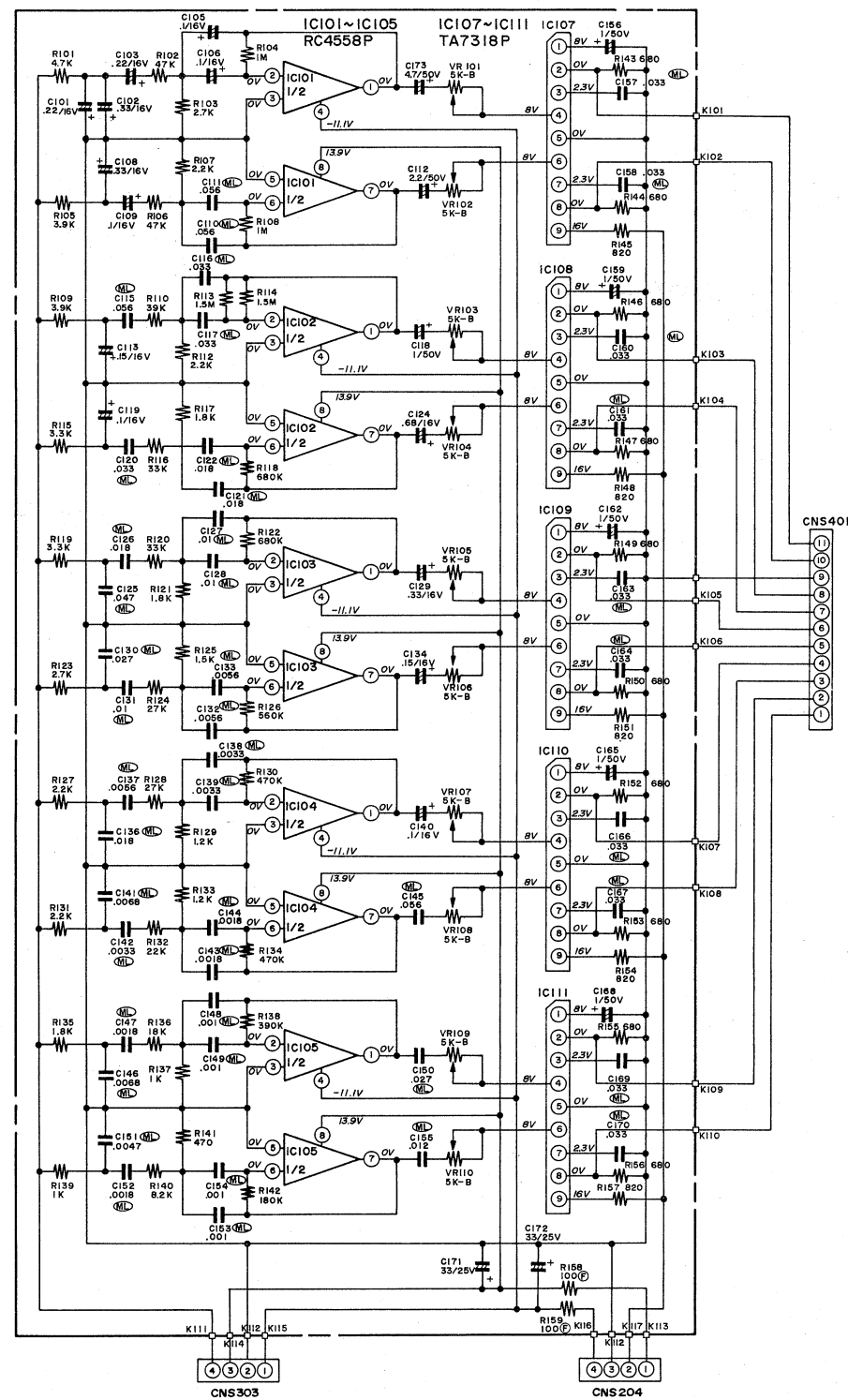
Figure 19 ALIGNMENT POINTS

Step	Signal generator		Meter connection	Adjust	Remarks
	Connection	Frequency			
1	Connect signal generator to DC input socket (SO1)-"left".	1kHz	Connect DC voltmeter to the speaker terminal "A-left".	VR106	1. Adjust the output of signal generator so that DC voltmeter indicates 10.0V. 2. Vary the frequency of signal generator and fix it where as many as the segments of the audio spectrum indicator can light up. 3. Rotate the variable resistor (VR106) to a point where the 6th (counted from the lowest) of the audio spectrum indicator will begin to vanish.
2	Same as step 1.	30Hz	Same as step 1.	VR101	Same as step 1.
3	Same as step 1.	60Hz	Same as step 1.	VR102	Same as step 1.
4	Same as step 1.	125Hz	Same as step 1.	VR103	Same as step 1.
5	Same as step 1.	250Hz	Same as step 1.	VR104	Same as step 1.
6	Same as step 1.	500Hz	Same as step 1.	VR105	Same as step 1.
7	Same as step 1.	2kHz	Same as step 1.	VR107	Same as step 1.
8	Same as step 1.	4kHz	Same as step 1.	VR108	Same as step 1.
9	Same as step 1.	8kHz	Same as step 1.	VR109	Same as step 1.
10	Same as step 1.	16kHz	Same as step 1.	VR110	Same as step 1.
11	Set "right" switch, "left" switch and "level-20dB" switch belonging to the audio spectrum analyzer switch (SW303, SW304, SW305) respectively to "on", "off" and "off" position.				
12	Connect signal generator to DC input socket (SO1)-"right".	1kHz	Connect DC voltmeter to the speaker terminal "A-right".		1. Same as step 1. 2. Same as step 1. 3. See the indication here is the same as in step 1.
13	Same as step 12.	30Hz	Same as step 12.		Same as step 12.
14	Same as step 12.	60Hz	Same as step 12.		Same as step 12.
15	Same as step 12.	125Hz	Same as step 12.		Same as step 12.
16	Same as step 12.	250Hz	Same as step 12.		Same as step 12.
17	Same as step 12.	500Hz	Same as step 12.		Same as step 12.
18	Same as step 12.	2kHz	Same as step 12.		Same as step 12.
19	Same as step 12.	4kHz	Same as step 12.		Same as step 12.
20	Same as step 12.	8kHz	Same as step 12.		Same as step 12.
21	Same as step 12.	16kHz	Same as step 12.		Same as step 12.
22	Set "left" switch, "right" switch and "level-20dB" switch belonging to the audio spectrum analyzer switch (SW303, SW304, SW305) respectively to "on", "off" and "on" position.				
23	Same as step 1.	Same as steps 1 thru 10.	Same as step 1.		1. Adjust the output of signal generator so that DC voltmeter indicates 1.0V. 2. Same as step 1. 3. Same as step 12.
24	Set "right" switch, "left" switch and "level-20dB" switch belonging to the audio spectrum analyzer switch (SW303, SW304, SW305) respectively to "on", "off" and "on" position.				
25	Same as step 12.	Same as steps 12 thru 21.	Same as step 12.		1. Same as step 23. 2. Same as step 1. 3. Same as step 12.



(Specifications or wiring diagrams of this model are subject to change for the improvement without prior notice.)

Figure 21 SCHEMATIC DIAGRAM (POWER AMPLIFIER/POWER SUPPLY/PROTECTION)



(Specifications or wiring diagrams of this model are subject to change for the improvement without prior notice.)

Figure 23 SCHEMATIC DIAGRAM (POWER INDICATOR/SPECTRUM INDICATOR)

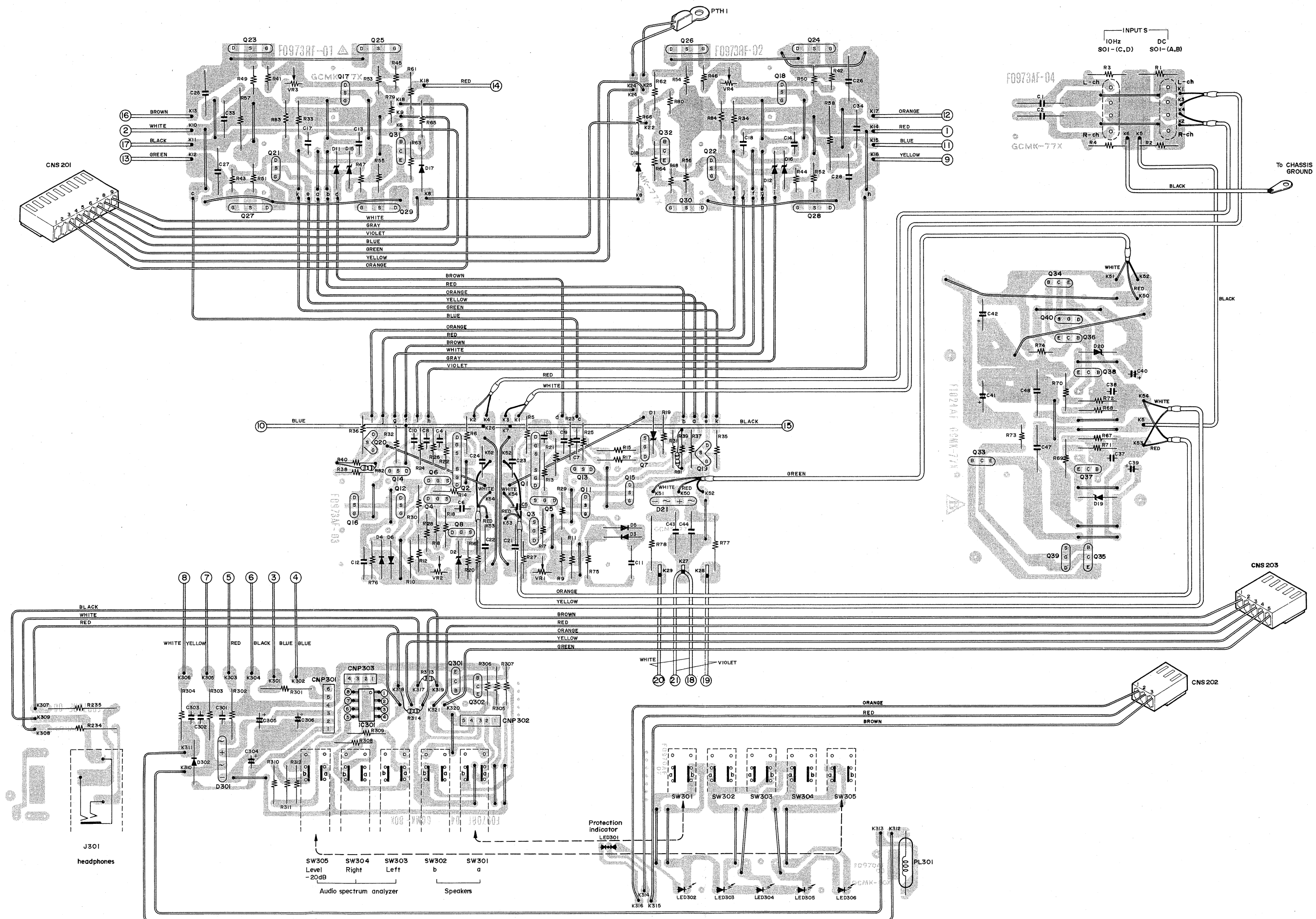


Figure 25 WIRING SIDE OF P.W. BOARD (POWER AMPLIFIER/VOLTAGE REGULATOR)

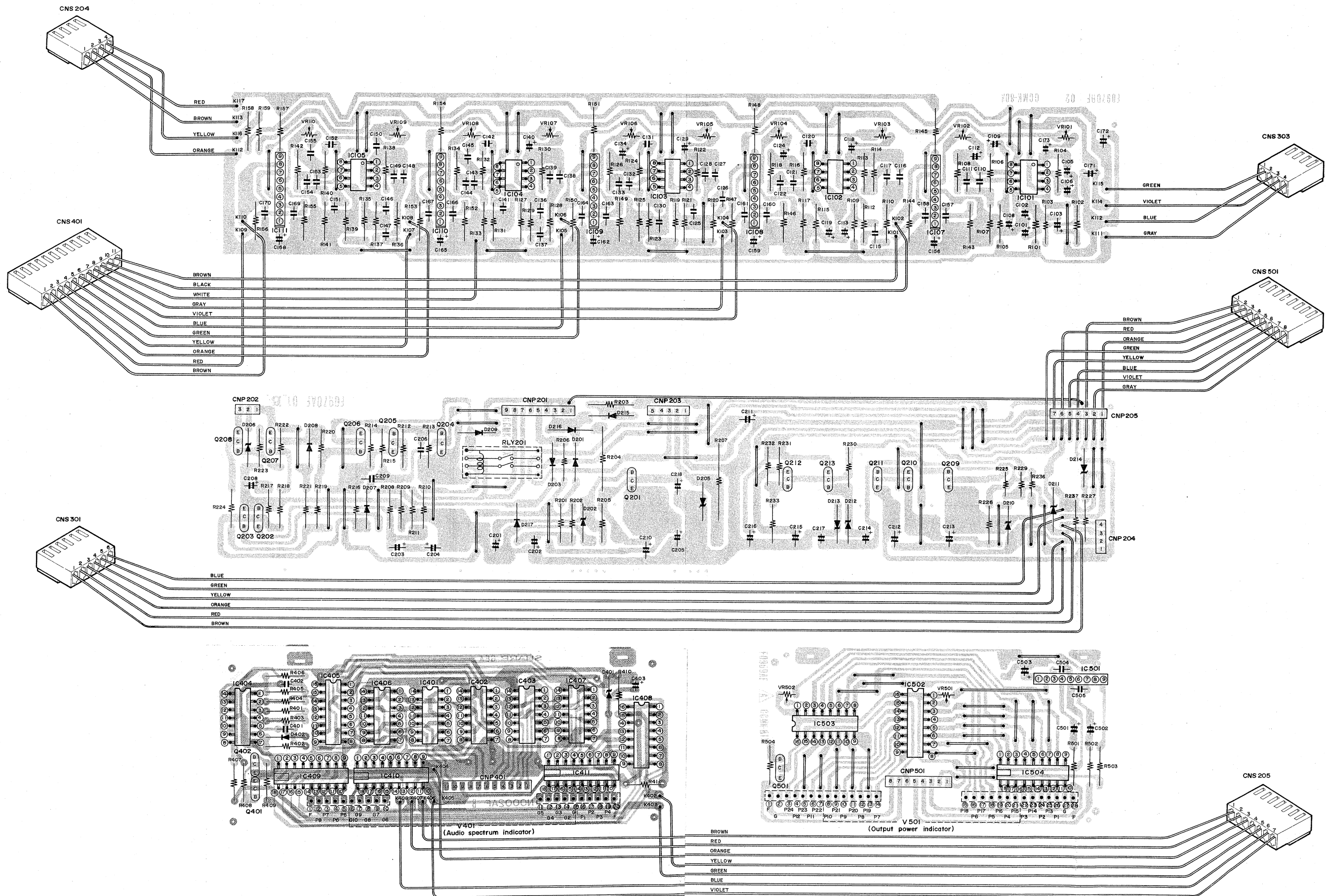


Figure 27 WIRING SIDE OF P.W. BOARD (POWER INDICATOR/SPECTRUM INDICATOR)

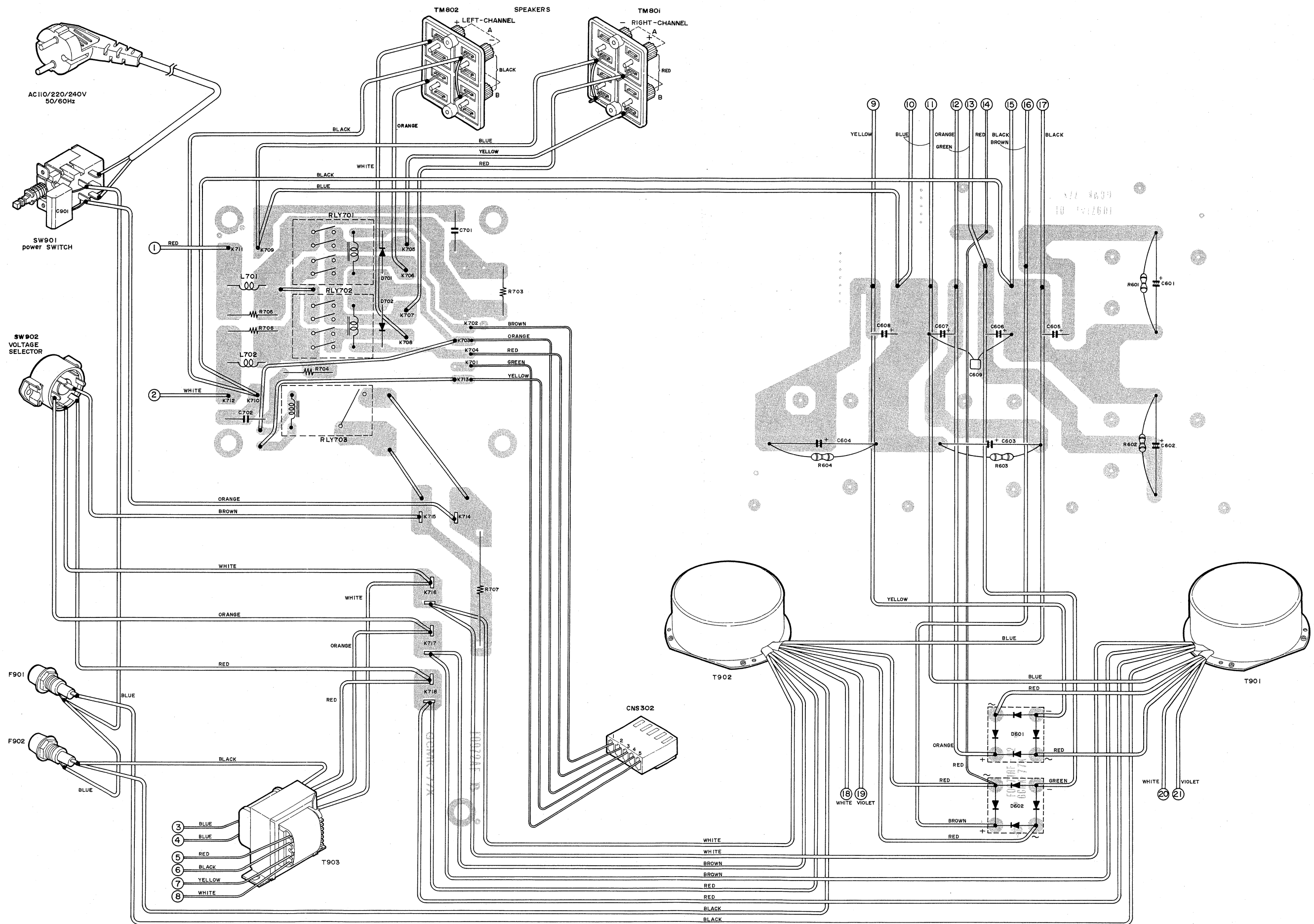


Figure 29 WIRING SIDE OF P.W. BOARD (POWER SUPPLY)

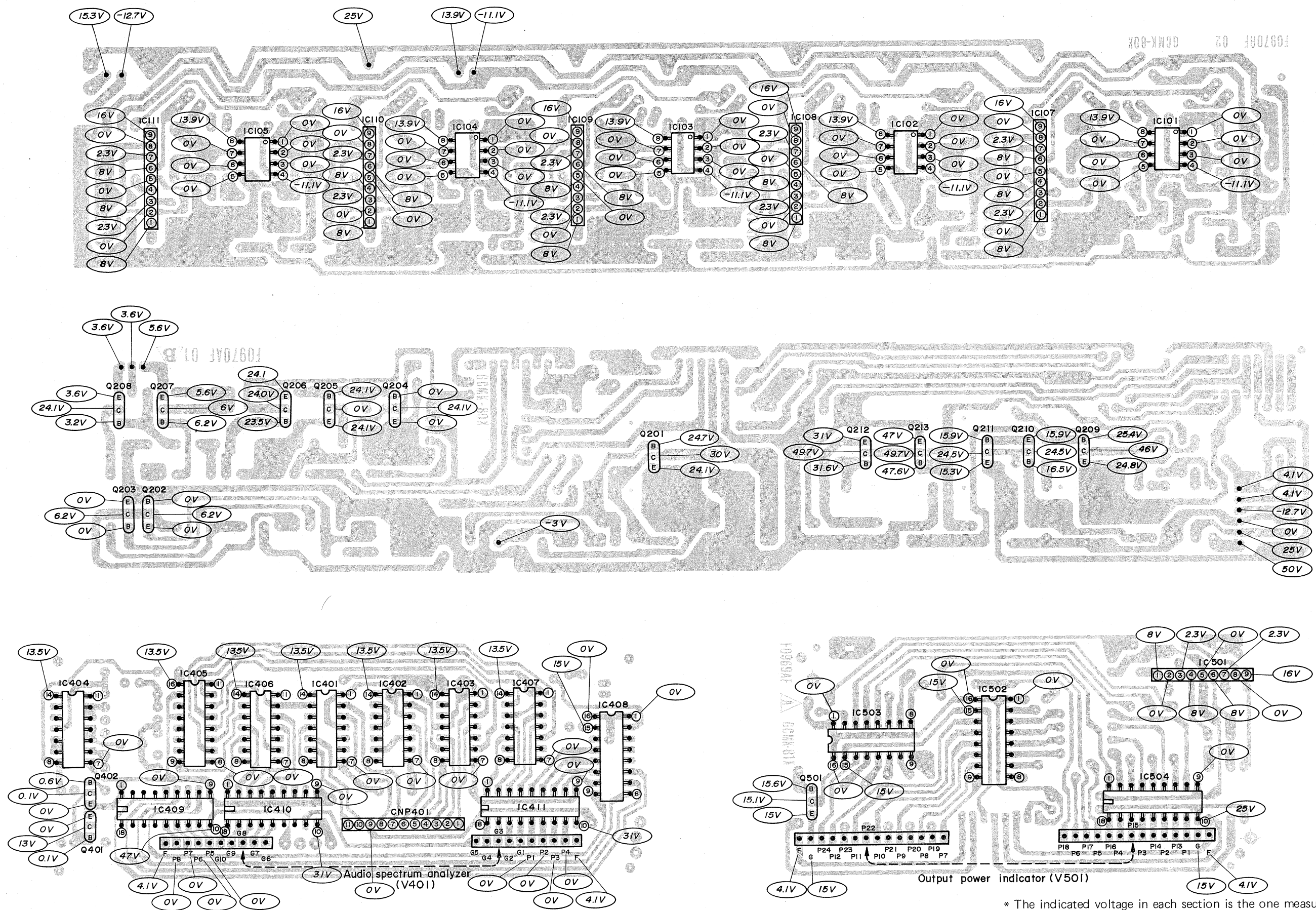
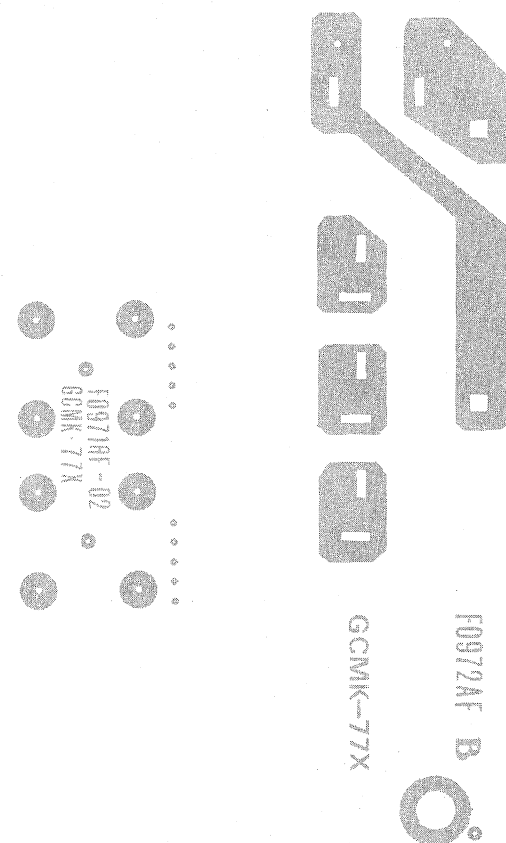
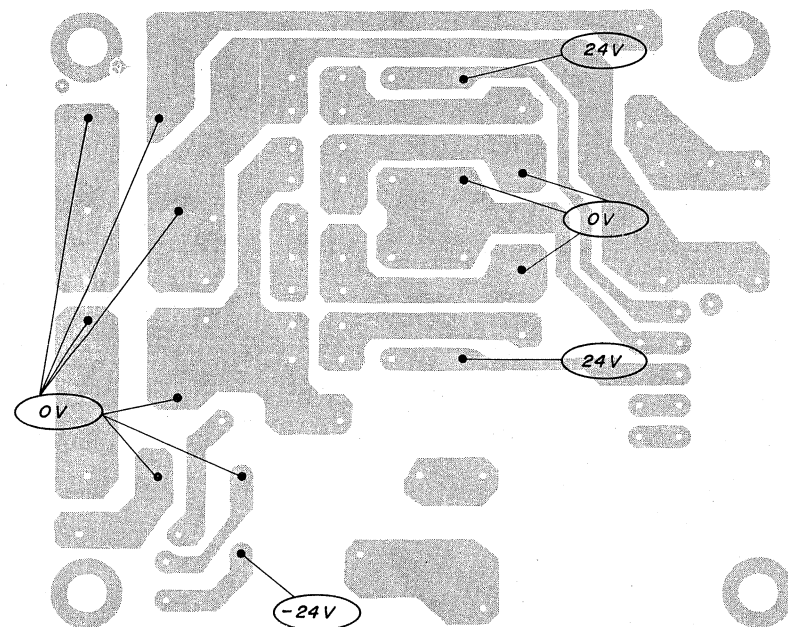


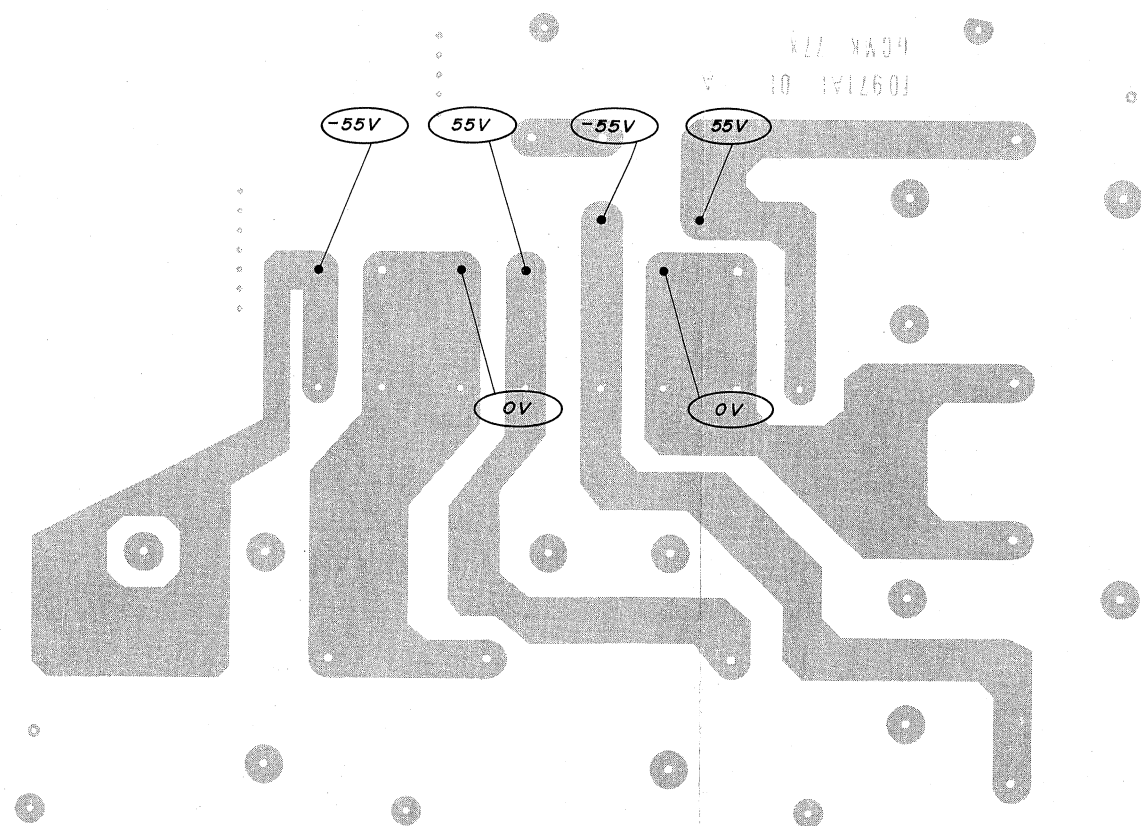
Figure 33 VOLTAGE GUIDE ON P.W. BOARD (POWER INDICATOR/SPECTRUM INDICATOR)



NOTES ON SCHEMATIC DIAGRAM

1. SW301: Speakers selector "a" switch (Shown in off mode.)
2. SW302: Speakers selector "b" switch (Shown in off mode.)
3. SW303: Audio spectrum indication selector "left" switch (Shown in off mode.)
4. SW304: Audio spectrum indication selector "right" switch (Shown in off mode.)
5. SW305: Audio spectrum indication selector "level -20dB" switch (Shown in off mode.)
6. SW901: Power On/Off switch (Shown in off mode.)
7. SW902: Mains voltage selector switch (Shown in "220V" position.)
8. (M) MICA CAPACITORS
9. (MF) METALIZED FILM CAPACITORS
10. (ML) MYLAR CAPACITORS
11. (ST) STYROL CAPACITORS
12. (MP) METALIZED PAPER CAPACITORS
13. (F) FUSIBLE RESISTORS

Be sure to use regular parts for securing the safety and reliability of the set. Parts marked with "Δ" and parts crosshatched (in black) are especially important for maintaining the safety and protecting ability of the set. Be sure to replace them with parts of specified part number.



* The indicated voltage in each section is the one measured by VTVM between such a section and the chassis with no signal being given.

Figure 35 VOLTAGE GUIDE ON P.W. BOARD (POWER SUPPLY)

DISASSEMBLY

Prior to removing the cabinet, be sure to draw the mains supply plug from an wall outlet and disconnect all of connection cords at the rear of the set.

A CABINET REMOVAL

1. Remove the 4 screws retaining the cabinet at the right and left surfaces. (Refer to Figure 39-1)
2. Shift the cabinet backward about 5 mm.
3. Giving a force to the bottom of cabinet, hold it up and remove. (Refer to Figure 39-1)

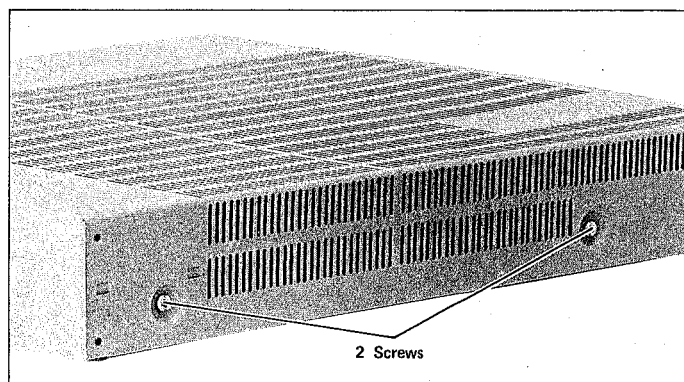


Figure 39-1

B BOTTOM LID REMOVAL

1. Turn the set over and remove the 17 screws retaining the bottom lid, then the bottom lid can be detached by holding it up. (Refer to Figure 39-2)

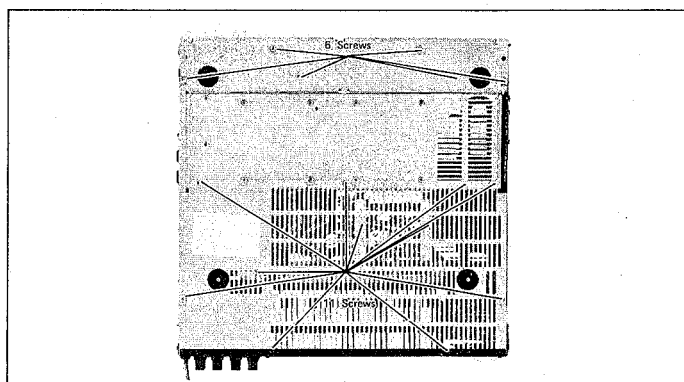


Figure 39-2

C FRONT PANEL REMOVAL

1. Remove the 7 screws retaining the front panel, then the front panel can be detached by pulling it toward you. (Refer to Figures 39-3 and 39-4).

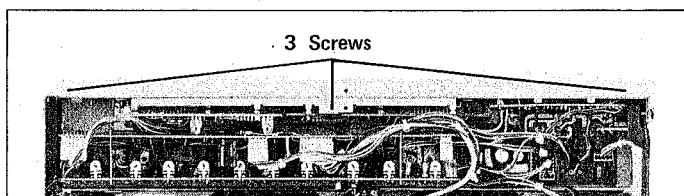


Figure 39-3

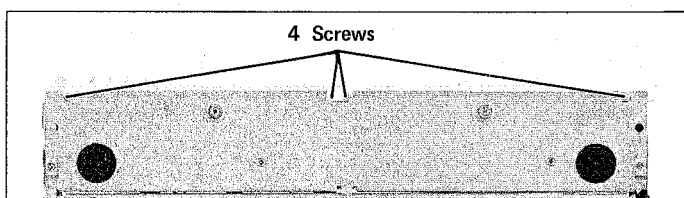


Figure 39-4

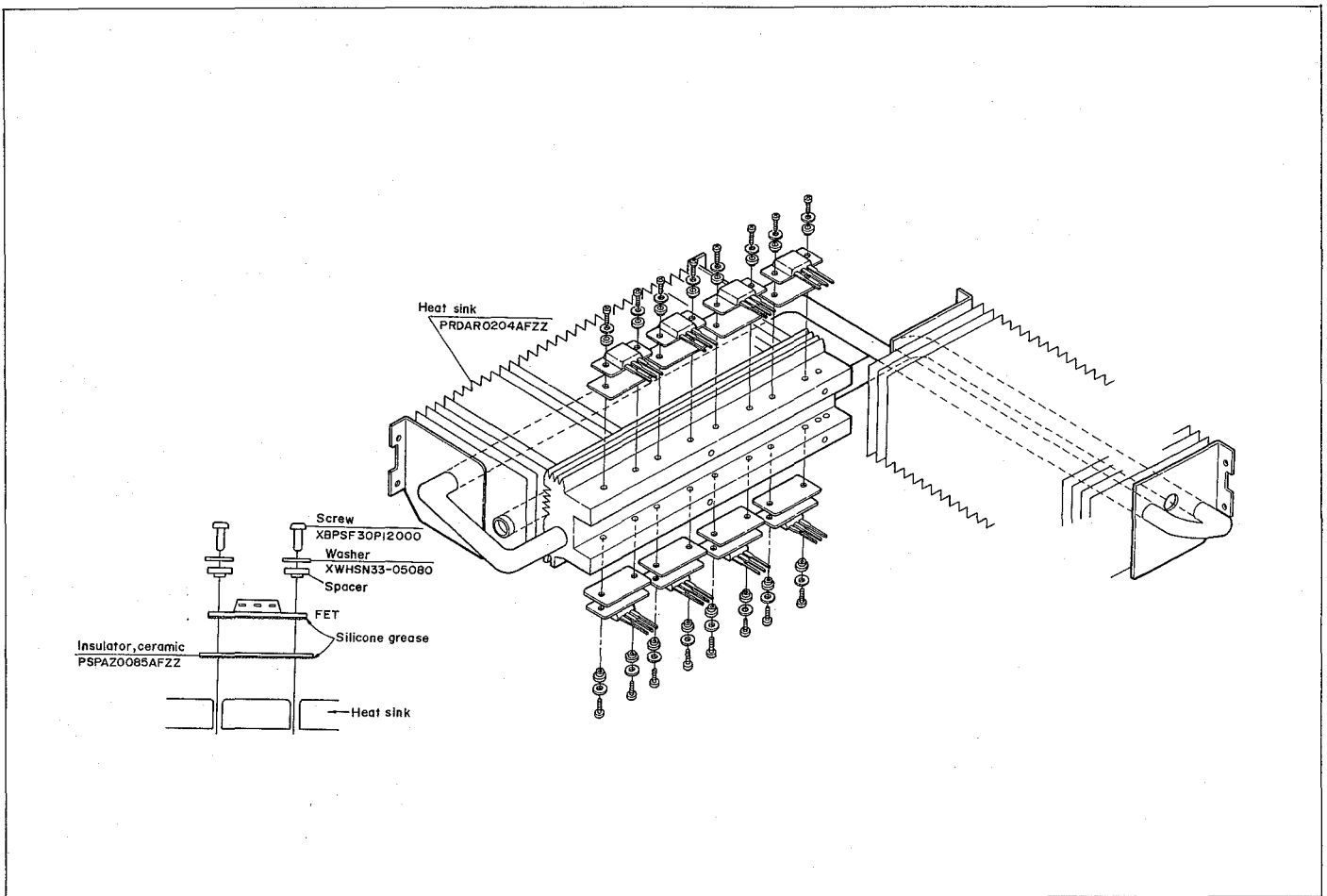
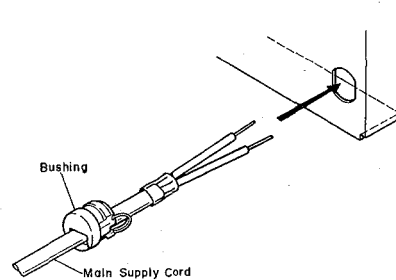
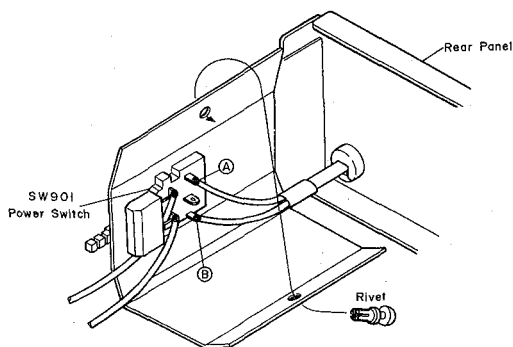
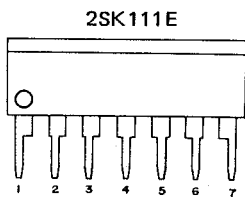


Figure 40 POWER FET REPLACEMENT

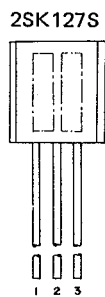


Mains supply cord	Bushing	Connection		Figure
		(A)	(B)	
(61) QACCS0051AF00	LBSHC0004AGZZ	Blue	Brown	
(60) QACCL0051AFZZ	LBSHC0004AFZZ	Blue	Brown	
(63) QACCS0052AF00	LBSHC0004AGZZ	Blue	Brown	
(62) QACCS0002TA0F	LBSHC0007AFZZ	Brown	Brown	
(64) QACCS0053AF00	LBSHC0007AFZZ	Black	Black	

Figure 41 MAINS SUPPLY CORD WIRING CONNECTIONS

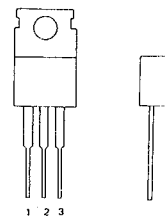


1. Drain-1
2. Gate-1
3. Source-1
4. Void pin
5. Source-2
6. Gate-2
7. Drain-2



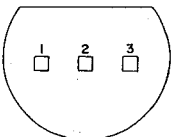
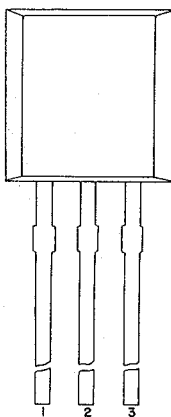
1. Source
2. Gate
3. Drain

2SJ77
2SJ214



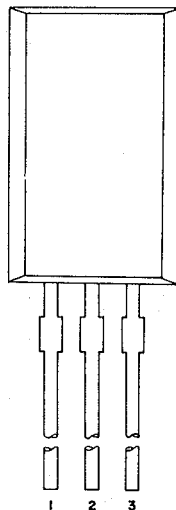
1. Gate
2. Source
3. Drain

2SC1775AE
2SA872AE



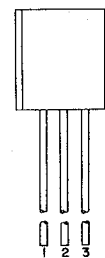
1. Emitter
2. Collector
3. Base

2SD755E

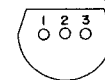


1. Emitter
2. Collector
3. Base

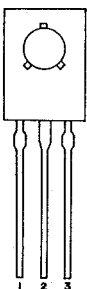
2SC2320G
2SA999F
2SK34B2



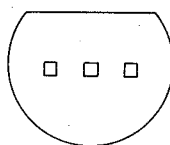
1. Emitter
2. Collector
3. Base



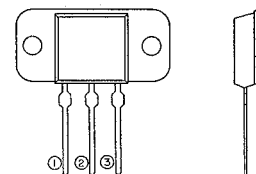
2SD794AQ
2SB744AQ
2SB669AC
2SB649AC



1. Emitter
2. Collector
3. Base



2SJ82
2SK226



1. Gate
2. Source
3. Drain



Figure 42 FETS AND TRANSISTORS TYPE

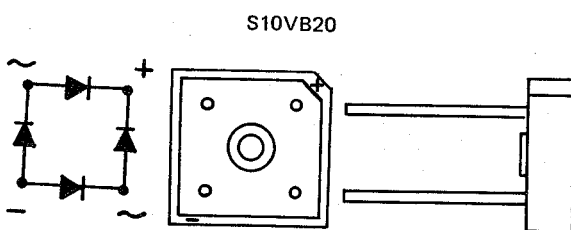
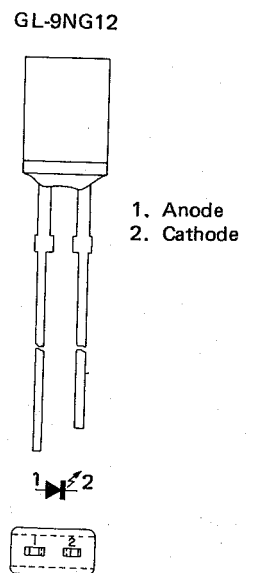
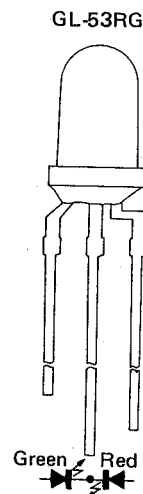
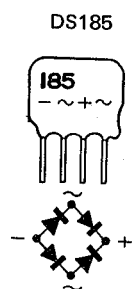
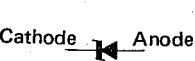
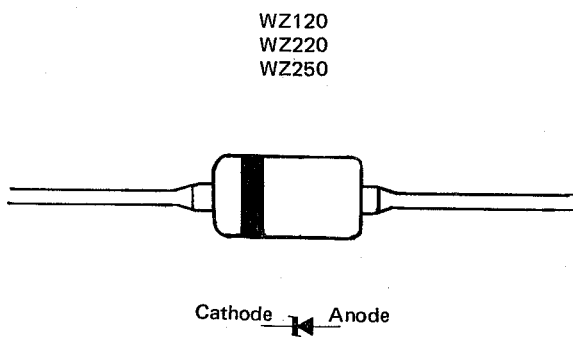
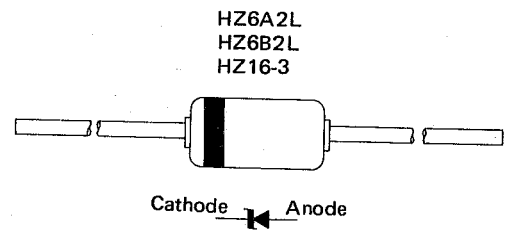
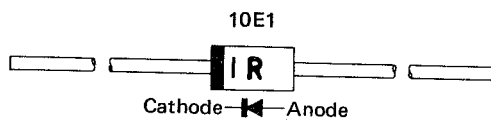
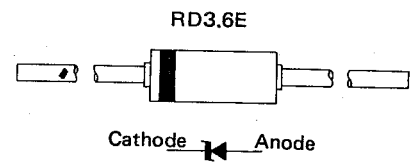
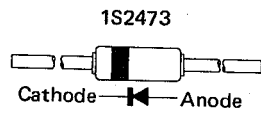


Figure 43 DIODES TYPE

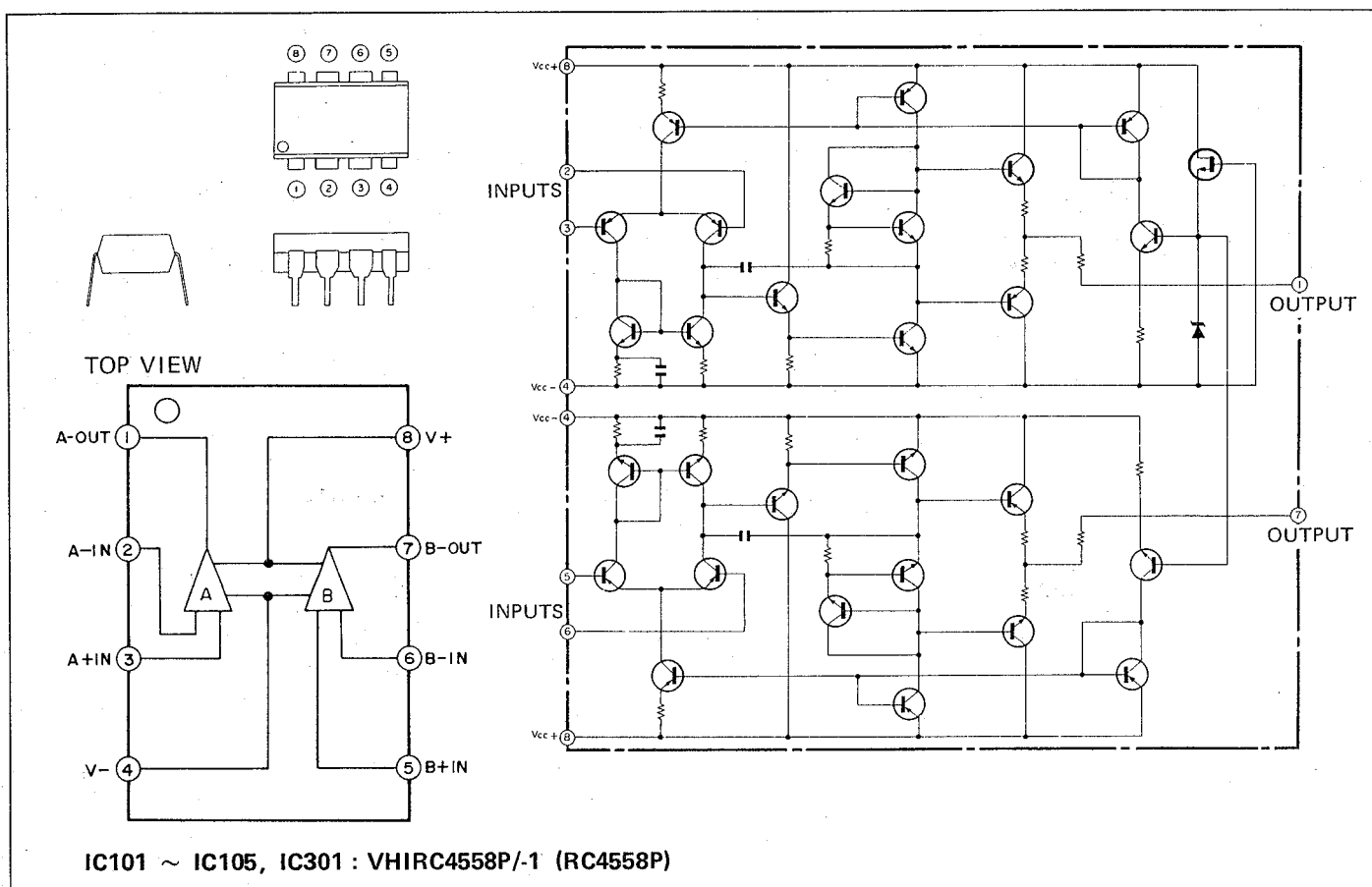


Figure 44-1 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT

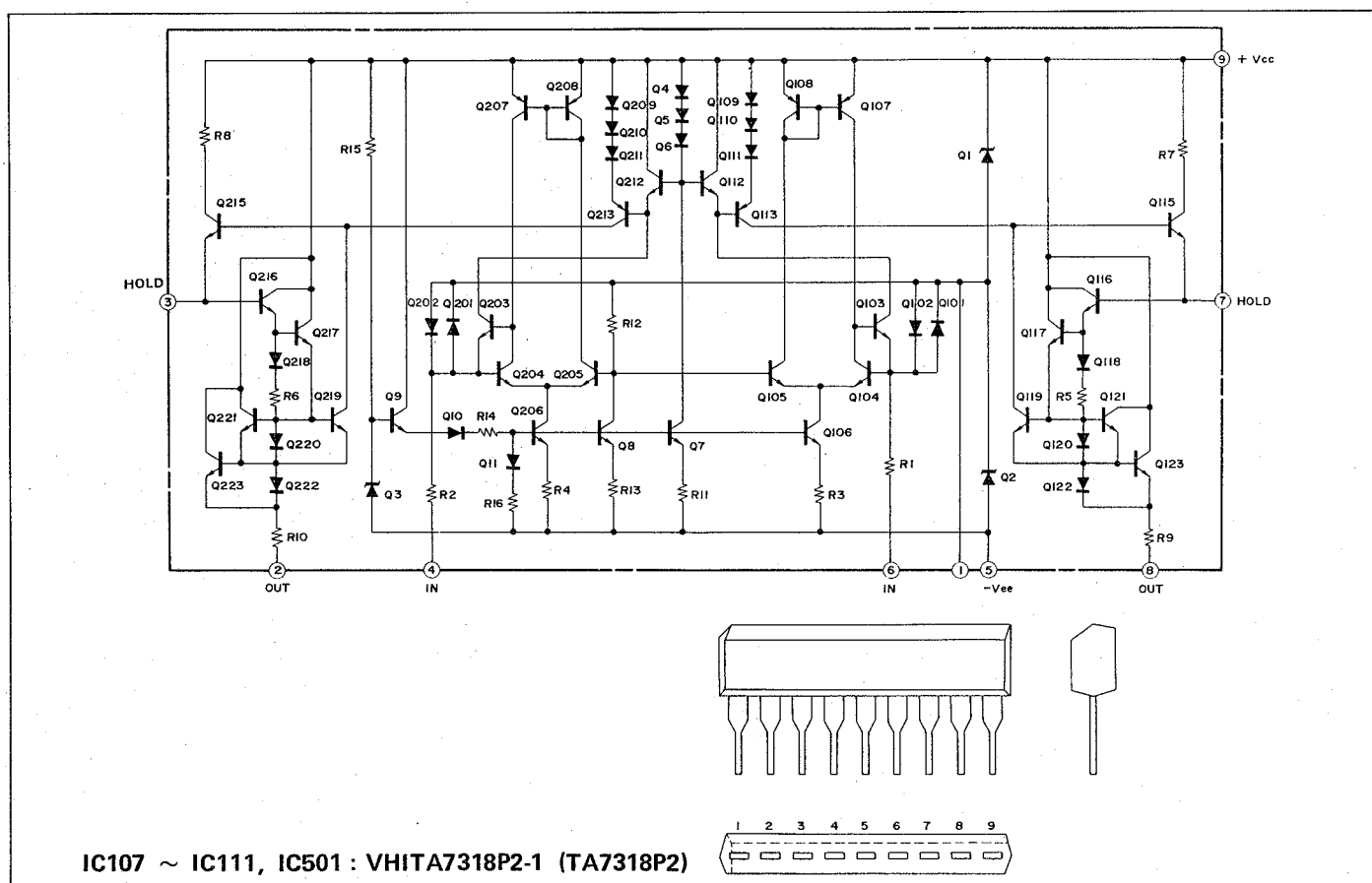
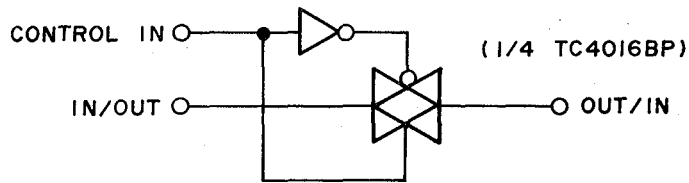
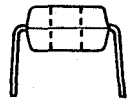
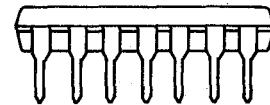
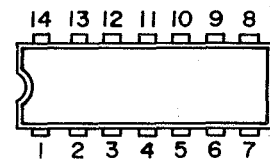
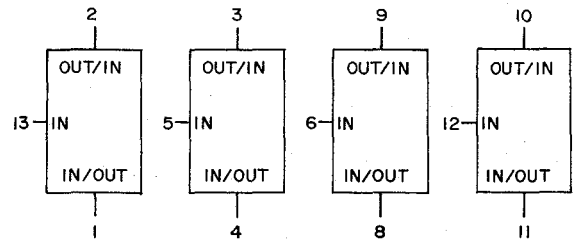
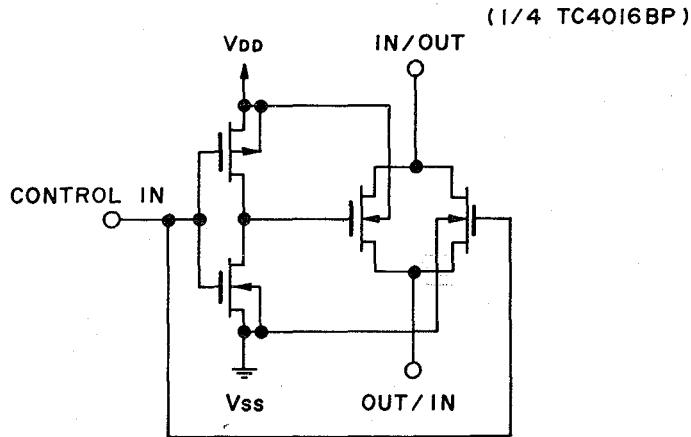


Figure 44-2 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT

Logic Symbol

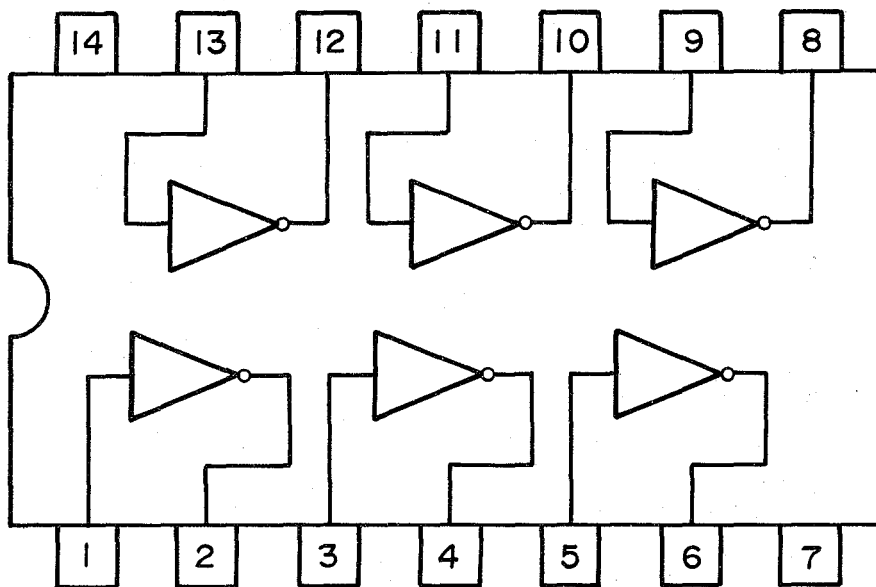


Circuit Schematic



I401 ~ IC403 : RH-IX1127AFZZ (TC4016BP)

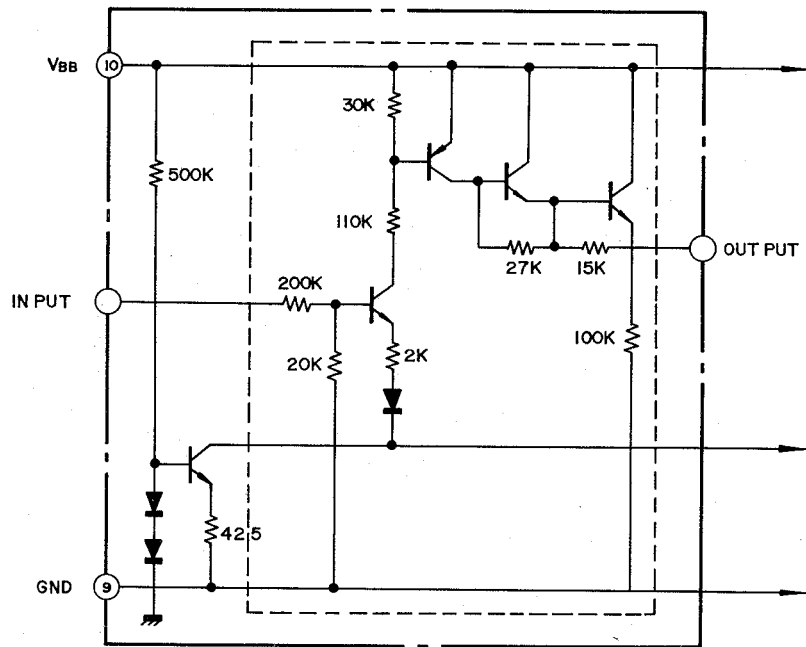
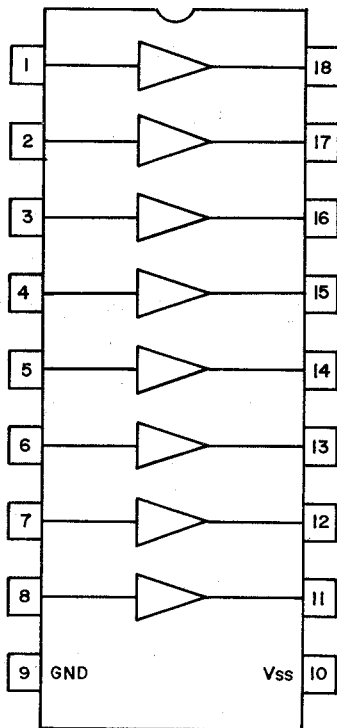
Figure 45-1 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT



IC404 : RH-IX1154AFZZ (TC4069UBP)

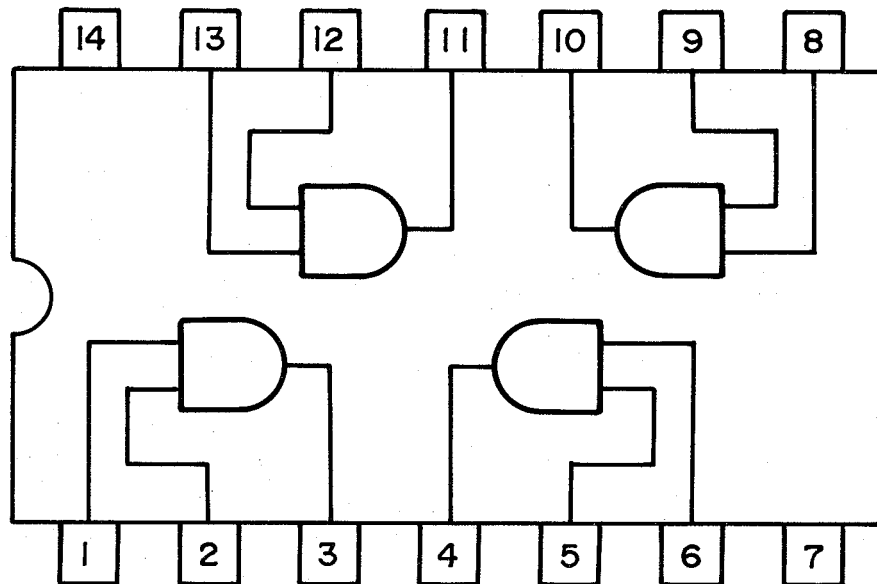
Figure 45-2 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT

(TOP VIEW)



IC409 ~ IC411, IC504 : VHIUDN6128A-1 (UDN6128A)

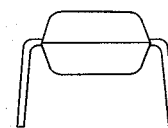
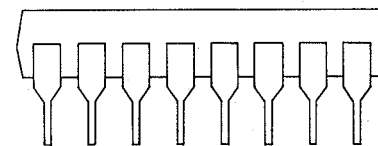
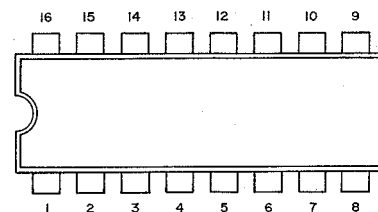
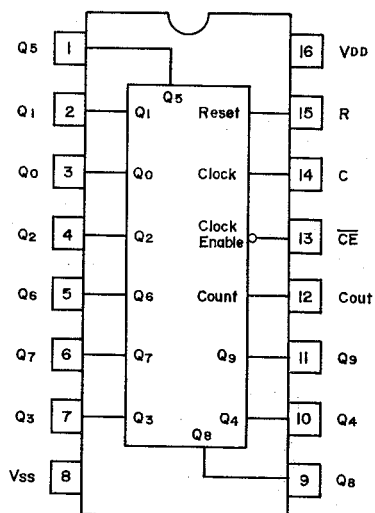
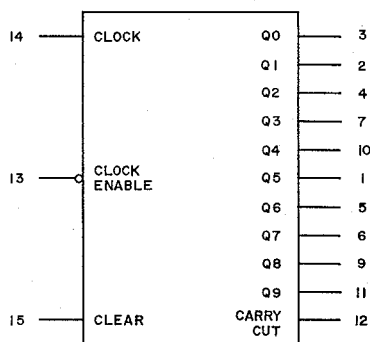
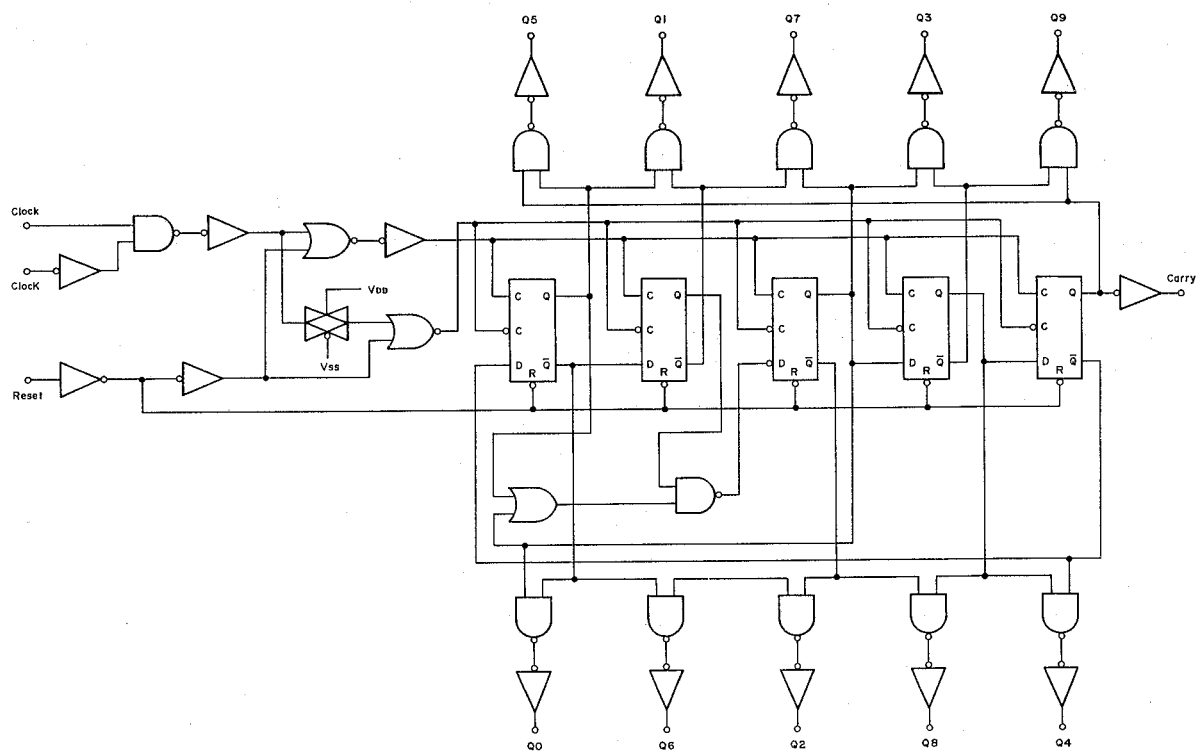
Figure 46-1 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT



RH-IX1156AFZZ

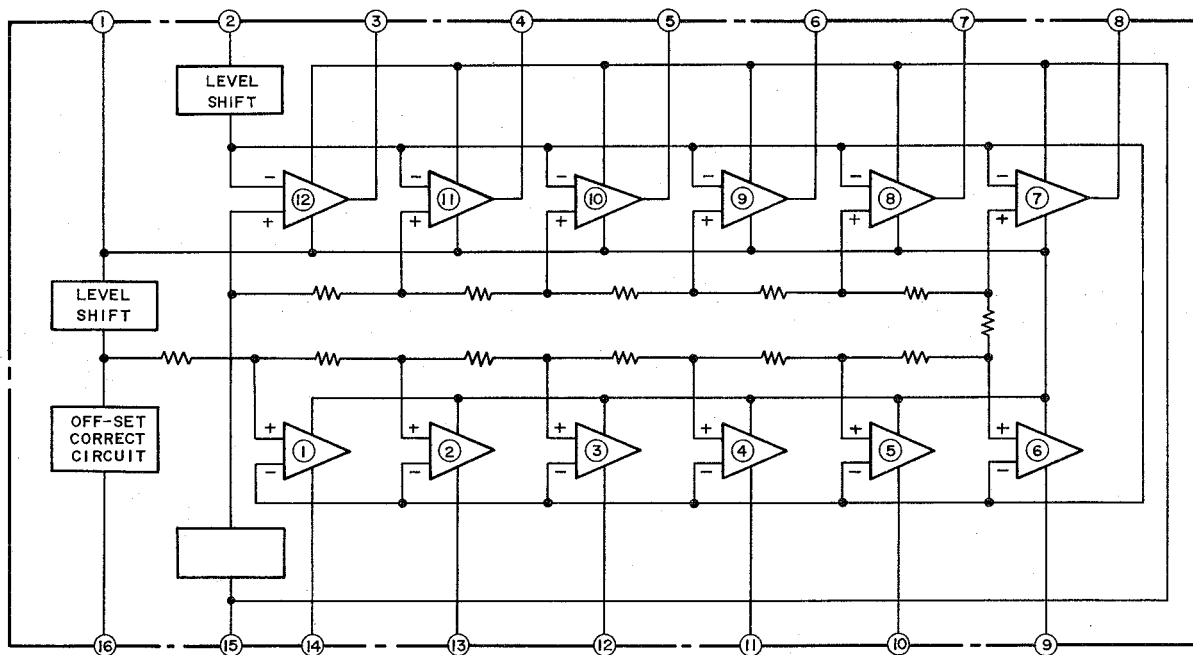
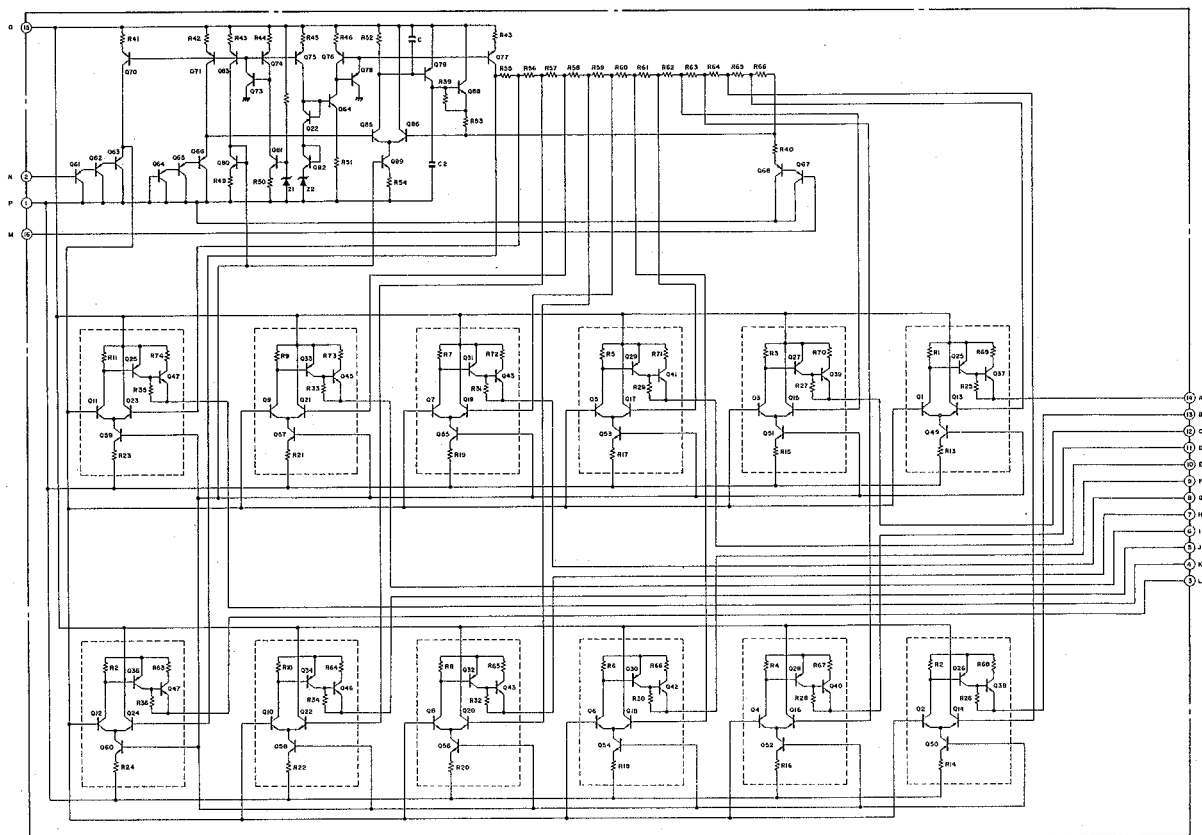
IC406, IC407 : RH-IX1156AFZZ (TC4081BP)

Figure 46-2 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT



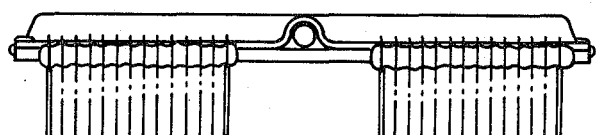
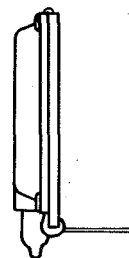
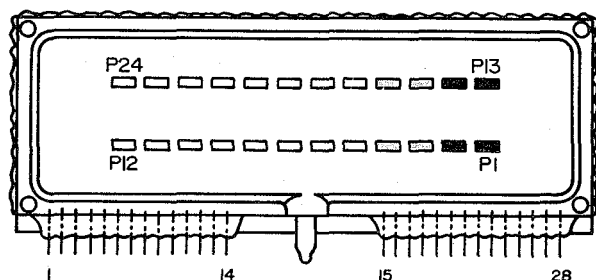
IC405 : RH-IX1175AFZZ (TC4017BP)

Figure 47 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT



IC408, IC502, IC503 : VHIHA12010/-1 (HA12010)

Figure 48 EQUIVALENT CIRCUIT OF INTEGRATED CIRCUIT



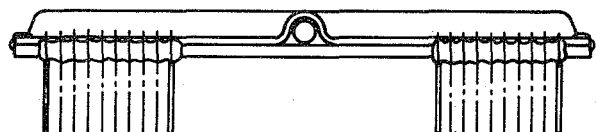
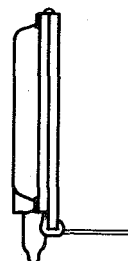
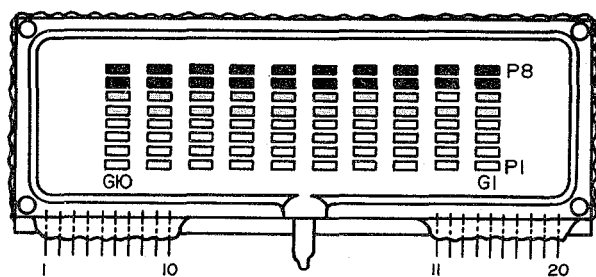
- red segment (P1.P2.P12.P13)
- yellow segment (P3.P4.P10.P11)
- green segment (P5~P12.P17~P24)

PIN CONNECTION P:Plate F:Cathode G:Grid

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
CONNECTION	F	G	P24	P12	P23	P11	P22	P10	P21	P9	P20	P8	P19	P7
PIN No.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
CONNECTION	P18	P6	P17	P5	P16	P4	P15	P13	P14	P2	P13	P1	G	F

V501 : VVKFG24SDL/-1

Figure 49-1 OUTPUT POWER INDICATOR



- red segment (P7.P8)
- yellow segment (P5.P6)
- green segment (P1~P4)

PIN CONNECTION P:Plate F:Cathode G:Grid

PIN No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
CONNECTION	F	P8	P7	P6	P5	G10	G9	G8	G7	G6	G5	G4	G3	G2	G1	P1	P2	P3	P4	F

V401 : VVKFG80SB1/-1

Figure 49-2 AUDIO SPECTRUM INDICATOR

CAUTIONS ON HANDLING MOS IC

(IC301, IC302, IC802, IC803, IC804)

MOS IC is to control the electric conductivity between the source and drain by using the voltage at the gate electrode through insulating oxide film (SiO_2). If overvoltage is applied to the gate electrode, the insulator at the gate electrode undergoes dielectric breakdown. Once such dielectric breakdown occurs, the junction between the gate and other terminals is shortcircuited and MOS IC is so damaged that its quality will not be recovered again.

■ CAUTIONS ON TRANSPORTATION AND PRESERVATION

As for MOS IC, either the input or output terminal has remarkably high impedance in comparison with ordinary semiconductor IC. Therefore, MOS IC is liable to be affected by the induction of nearby high-tension power source or A.C. power source and it may be given a larger voltage unexpectedly due to body discharged possibly causing dielectric breakdown of the gate. To eliminate this, during transportation and preservation of MOS IC all the terminals should be kept at the same potential in the following methods (to shortcircuit all the terminals).

- ① Wind thin wire around MOS IC.
- ② Fit metallic ring on it.
- ③ Pack it with aluminum foil.
- ④ Hold it by electric conductive jig.
- ⑤ Put it in a special case for MOS IC.

Note: Never put MOS IC in a mal-conductive container such as made of polystyrene.

And, MOS IC is highly sensitive to static charge because its gate oxide film is as thin as $1000\text{\AA}$ to $1500\text{\AA}$. Input protective circuit is provided to protect MOS IC but this circuit can not always play its role according to the conditions of using MOS IC.

Therefore, pay due attention to the following when handling it.

■ CAUTIONS ON SERVICING

- ① A soldering tool to be used should be the less-leak one (more than 100 Kohm of leak resistance—there may be a soldering tool of more than 1 Meg.ohm to be used for semiconductor). Otherwise, ground the soldering tool when using it.
- ② Ground the earth terminal of a measuring instrument.
- ③ Ground a bench.
- ④ Before insertion or removal of IC to or from P.W.B., be sure to turn off the power switch.
- ⑤ When inserting IC to P.W.B., ground the earth terminal of P.W.B.
- ⑥ Never touch the terminals of IC by hand.
- ⑦ Be sure to ground the earth terminal of D.C. power source.
- ⑧ To prevent IC from being broken due to human body discharge, it is necessary to ground the human body. But this requires the greatest care as otherwise the body encounters large current (absolutely avoid touching A.C. power source).
- ⑨ As MOS IC is actuated with a small current, be sure to remove soldering flux and perform moisture-proof treatment after repairing. (Apply moisture-proof agent for electronic calculator.)

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.

- | | |
|-----------------|----------------|
| 1. MODEL NUMBER | 2. REF. NO. |
| 3. PART NO. | 4. DESCRIPTION |

NOTES: Be sure to use regular parts for securing the safety and reliability of the set. Parts marked with "△" and parts cross-hatched (in black) are especially important for maintaining the safety and protecting ability of the set.
Be sure to replace them with parts of specified part number.

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
INTEGRATED CIRCUITS							
IC101, IC102, IC103, IC104, IC105, IC107, IC108, IC109, IC110, IC111	VHIRC4558P/-1	Filter Amplifier (RC4558P)	AG	Q19	VS2SK214-//1F	Power Amplifier Circuit, Cascode Amplifier (2SK214)	AH
IC401, IC402, IC403, IC404	RH-IX1127AFZZ	Bilateral Switch (TC4016BP)	AK	Q20, Q21	VS2SK214-//1F	Power Amplifier Circuit, Phase Inverter (2SK214)	AH
IC405, IC406, IC407, IC408, IC409, IC410, IC411	VHITA7318P2-1	Logarithm Compressor (TA7318P2)	AK	Q22	VS2SK214-//1F	Power Amplifier Circuit, Cascode Amplifier (2SK214)	AH
IC501	VHIRC4558P/-1	Buffer and Mixing Amplifier (RC4558P)	AG	Q23, Q24, Q25, Q26	VS2SK226-//1F	Power Amplifier Circuit, SEPP (Single ended push-pull) Amplifier (2SK226)	AU
IC502, IC503, IC504	VHIHA12010/-1	Level Comparator (HA12010)	AQ	Q27, Q28, Q29, Q30	VS2SJ82-///1F	Power Amplifier Circuit, SEPP (Single ended push-pull) Amplifier (2SJ82)	AU
IC505	VHIUDN6128A-1	Buffer (UDN6128A)	AP	Q39, Q40	VS2SK34-B2/1F	Constant Voltage Circuit, Constant Current Load (2SK34B)	AE
FETS				TRANSISTORS			
Q1, Q2	VS2SK111-E/-1	Dual FET, Power Amplifier Circuit, First-stage Differential Amplifier (2SK111E)	AL	Q31, Q32	VS2SC1775AE-1	Power Amplifier Circuit Over Current Detection Circuit (2SC1775AE)	AC
Q3, Q4, Q5, Q6, Q7, Q8	VS2SK127-S/1F	Power Amplifier Circuit, First-stage Cascode Amplifier (2SK127S)	AE	Q33	VS2SD669A-C-1	Constant Voltage Circuit, Voltage Regulator (2SD669AC)	AF
Q11, Q12, Q13, Q14, Q15, Q16, Q17, Q18	VS2SJ77-///1F	Power Amplifier Circuit, Second-stage Differential Amplifier (2SJ77)	AK	Q34	VS2SB649A-C-1	Constant Voltage Circuit, Voltage Regulator (2SB649AC)	AF
	VS2SJ77-///1F	Power Amplifier Circuit, Second-stage Cascode Amplifier (2SJ77)	AK	Q35	VS2SC1775AE-1	Constant Voltage Circuit, Voltage Regulator (2SC1775AE)	AC
				Q36	VS2SA872A-E-1	Constant Voltage Circuit, Voltage Regulator (2SA872AE)	AC
				Q37	VS2SC1775AE-1	Constant Voltage Circuit, Voltage Comparison (2SC1775AE)	AC
				Q38	VS2SA872A-E-1	Constant Voltage Circuit, Voltage Comparison (2SA872AE)	AC
				Q201	VS2SD794A-Q-1	Voltage Regulator (2SD794AQ)	AE
				Q202, Q203	VS2SC2320-G-1	Abnormal Detection (2SC2320G)	AB
				Q204	VS2SC2320-G-1	Latch (2SC2320G)	AB
				Q205	VS2SA999-F/-1	Latch (2SA999F)	AC
				Q206	VS2SA999-F/-1	Relay Switching (2SA999F)	AC
				Q207, Q208	VS2SC2320-G-1	LED Switching (2SC2320G)	AB
				Q209	VS2SD794A-Q-1	Voltage Regulator (2SD794AQ)	AE
				Q210	VS2SC2320-G-1	Voltage Regulator (2SC2320G)	AB

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
Q211	VS2SD794A-Q-1	Voltage Regulator (2SD794AQ)	AE	LED302	VHPGL-9NG12-1	Indicator, "a" Speakers Switch (GL-9NG12)	AD
Q212, Q213	VS2SD755-E/-1	Voltage Regulator (2SD755E)	AD	LED303	VHPGL-9NG12-1	Indicator, "b" Speakers Switch (GL-9NG12)	AD
Q301	VS2SA999-F/-1	Constant Current (2SA999F)	AC	LED304	VHPGL-9NG12-1	Indicator, "Left Channel" Audio Spectrum Switch (GL-9NG12)	AD
Q302	VS2SB744A-Q-1	Constant Current (2SB744AQ)	AE	LED305	VHPGL-9NG12-1	Indicator, "Right Channel" Audio Spectrum Switch (GL-9NG12)	AD
Q401, Q402	VS2SC2320-G-1	Muting (2SC2320G)	AB	LED306	VHPGL-9NG12-1	Indicator, Level Switch (GL-9NG12)	AD
Q501	VS2SC2320-G-1	Muting (2SC2320G)	AB				
DIODES				COILS			
D1, D2, D3, D4, D5, D6	VHEHZ6B2L//-1	Zener, 6V/0.4W (HZ6B2L)	AC	L701, L702	RCILZ0067AFZZ	1.2μH, Oscillation Prevention	AD
D11, D12, D15, D16	VHEWZ-120//-1	Zener, 12V/0.5W (WZ120)	AC	POSISTOR			
D17, D18	VHD10E1////-1	Over Current Rectifier (10E1)	AC	PTH1	RH-QX1001AFZZ	Temperatures Detection	AF
D19, D20	VHEHZ6B2L//-1	Zener, 6V/0.4W (HZ6B2L)	AC	RELAYS			
D21	VHDDS185-D/-1	Power Rectifier 200V/1.3A (DS185)	AE	RLY201	RRLYZ0053AFZZ	Relay, Protection	AP
D201	VHD10E1////-1	Rectifier (10E1)	AC	RLY701	RRLYZ0071AFZZ	Relay, Speaker-A	AR
D202	VHEWZ250///-1	Zener, 25V/0.5W (WZ250)	AC	RLY702	RRLYZ0071AFZZ	Relay, Speaker-B	AR
D203	VHD1S2473//-1	Malfunction Prevention (1S2473)	AA	RLY703	RRLYZ0072AFZZ	Relay, Rush Current Prevention	AQ
D205	VHEWZ250///-1	Zener, 25V/0.5W (WZ250)	AC	TRANSFORMERS			
D206	VHERD3R6EC/-1	Zener, 3.6V/0.4W (RD3.6E)	AB	T901	RTRNP0633AFZZ	Right Channel Power Amplifier, Power Source	BP
D207, D208	VHD1S2473//-1	Malfunction Prevention (1S2473)	AA	ΔT902	RTRNP0633AFZZ	Left Channel Power Amplifier, Power Source	BP
D209	VHD1S2473//-1	Surge Current Prevention (1S2473)	AA	T903	RTRNP0634AFZZ	Power Source	BA
D210	VHEHZ163///-1	Zener, 16V/0.5W (HZ16-3)	AB	CONTROLS			
D211	VHEHZ6A-1L/-1	Zener, 6V/0.4W (HZ6A1L)	AB	VR1, VR2	RVR-M0082AGZZ	47K ohm (B), Offset Voltage Adjust	AF
D212	VHEWZ220///-1	Zener, 22V/0.5W (WZ220)	AB	VR3, VR4	RVR-M0070AGZZ	220 ohm (B), Offset Voltage Adjust	AE
D213	VHEWZ250///-1	Zener, 25V/0.5W (WZ250)	AC	VR101, VR102, VR103, VR104, VR105, VR106, VR107, VR108, VR109, VR110	RVR-M0168AFZZ	5K ohm (B), Spectrum Indicator Level Adjust	AC
D214	VHEHZ6A-1L/-1	Zener, 6V/0.4W (HZ6A1L)	AB	VR501, VR502	RVR-M0166AFZZ	2K ohm (B), Output Power Indicator Level Adjust	AC
D215, D216	VHD10E1////-1	Rectifier 100V/1A (10E1)	AC	FLUORESCENT LIGHTING TUBES			
D217	VHD1S2473//-1	Malfunction Prevention (1S2473)	AA	V401	VVKFG80SB1/-1	Audio Spectrum Indicator	BN
D301	VHDDS185-D/-1	Power Rectifier 200V/1.3A (DS185)	AE	V501	VVKFG24SDL/-1	Output Power Indicator	BG
D302	VHD10E1////-1	Rectifier 100V/1A (10E1)	AC				
D402	VHD1S2473//-1	Clock Pulse Oscillator (1S2473)	AA				
D601	VHDS10VB20/-1	Power Rectifier, Main (S10VB20)	AM				
D602	VHDS10VB20/-1	Power Rectifier, Main (S10VB20)	AM				
D701, D702	RH-DX1006AFZZ	Surge Current Prevention (10E1)	AB				
LED (Light Emitting Diode)				FLUORESCENT LIGHTING TUBES			
LED301	VHPGL-53RG/1F	Indicator, Power/Protection (GL-53RG)	AG				

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
ELECTROLYTIC CAPACITORS							
C39, C40, C41, C42	VCEAAU1CW336Y	33MFD, 16V, +50 -10%	AB	C3, C4	VCMZYU1HC331J	330PF, 50V, ±5%, Mica	
C101	RC-EZ1126AFZZ	470MFD, 100V, ±20%	AN	C5, C6	VCQSMU1HS332J	3300PF, 50V, ±5%, Styrol	AB
C102	VCAAAU1CF224M	.22MFD, 16V, ±20%, Aluminum	AC	C7, C8	VCMZYU1HC270J	27PF, 50V, ±5%, Mica	
C103	VCAAAU1CF334M	.33MFD, 16V, ±20%, Aluminum	AB	C9, C10	VCMZYU1HC4R0J	4PF, 50V, ±5%, Mica	
C105, C106	VCAAAU1CF224M	.22MFD, 16V, ±20%, Aluminum	AC	C11, C12	VCMZYU1HC181J	180PF, 50V, ±5%, Mica	
C108	VCAAAU1CF104M	.1MFD, 16V, ±20%, Aluminum	AB	C13, C14	VCMZYU1HC561J	560PF, 50V, ±5%, Mica	
C109	VCAAAU1CF334M	.33MFD, 16V, ±20%, Aluminum	AB	C17, C18	VCMZYU1HC561J	560PF, 50V, ±5%, Mica	
C112	VCEALU1HC104M	.1MFD, 16V, ±20%, Aluminum	AB	C21, C22, C23, C24, C25, C26, C27, C28	VCFYSU2AB105K	1MFD, 100V, ±10%, Metalized Film	
C113	VCAAAU1CF154M	.15MFD, 16V, ±20%, Aluminum	AB	C33, C34	VCFYSU2EB473K	.047MFD, 250V, ±10%, Metalized Film	
C118	VCEALU1HC105M	1MFD, 50V, ±20%	AB	C37, C38	VCMZYU1HC181J	180PF, 50V, ±5%, Mica	
C119	VCAAAU1CF104M	.1MFD, 16V, ±20%, Aluminum	AB	C43, C44	VCFYSU2JB103M	.01MFD, 630V, ±20%, Metalized Film	
C124	VCAAAU1CF684M	.68MFD, 16V, ±20%, Aluminum	AB	C47, C48	VCFYSU2AB105K	1MFD, 100V, ±10%, Metalized Film	
C129	VCAAAU1CF334M	.33MFD, 16V, ±20%, Aluminum	AB	C110, C111	VCQYKU1HM563J	.056MFD, 50V, ±5%, Mylar	AB
C134	VCAAAU1CF154M	.15MFD, 16V, ±20%, Aluminum	AB	C115, C116, C117	VCQYKU1HM563J	.056MFD, 50V, ±5%, Mylar	AB
C140	VCAAAU1CF104M	.1MFD, 16V, ±20%, Aluminum	AB	C120, C121, C122	VCQYKU1HM333J	.033MFD, 50V, ±5%, Mylar	AB
C156	VCEAAU1HW105Y	1MFD, 50V, +50 -10%	AB	C125, C126	VCQYKU1HM183J	.018MFD, 50V, ±5%, Mylar	AB
C159	VCEAAU1HW105Y	1MFD, 50V, +50 -10%	AB	C127, C128	VCQYKU1HM473J	.047MFD, 50V, ±5%, Mylar	AB
C162	VCEAAU1HW105Y	1MFD, 50V, +50 -10%	AB	C130, C131	VCQYKU1HM183J	.018MFD, 50V, ±20%, Mylar	AB
C165	VCEAAU1HW105Y	1MFD, 50V, +50 -10%	AB	C132, C133	VCQYKU1HM103J	.01MFD, 50V, ±5%, Mylar	AB
C168	VCEAAU1HW105Y	1MFD, 50V, +50 -10%	AB	C136, C137	VCQYKU1HM273J	.027MFD, 50V, ±5%, Mylar	AB
C171, C172	VCEAAU1EW336Y	33MFD, 25V, +50 -10%	AB	C138, C139	VCQYKU1HM103J	.01MFD, 50V, ±5%, Mylar	AB
C173	VCEALU1HC475M	4.7MFD, 50V, ±20%	AC	C143, C144	VCQYKU1HM562J	.0056MFD, 50V, ±5%, Mylar	AB
C201	RC-EZS337AF0J	330MFD, 6.3V, ±20%	AB	C145, C146	VCQYKU1HM183J	.018MFD, 50V, ±5%, Mylar	AB
C202	RC-EZS476AF1H	47MFD, 50V, ±20%	AC	C147, C148, C149	VCQYKU1HM562J	.0056MFD, 50V, ±5%, Mylar	AB
C203, C204	VCEAAU1AW107Y	100MFD, 10V, +50 -10%	AB	C150, C151	VCQYKU1HM332J	.0033MFD, 50V, ±5%, Mylar	AB
C205	RC-EZS337AF1H	330MFD, 50V, ±20%	AE	C142, C143, C144	VCQYKU1HM682J	.0068MFD, 50V, ±5%, Mylar	AB
C208	RC-EZS107AF1H	100MFD, 50V, ±20%	AC	C145, C146, C147	VCQYKU1HM332J	.0033MFD, 50V, ±5%, Mylar	AB
C210, C211	VCEAAU1HW105Y	1MFD, 50V, ±20%	AB	C148, C149	VCQYKU1HM182J	.0018MFD, 50V, ±5%, Mylar	AB
C212, C213	RC-EZS476AF1J	47MFD, 63V, ±20%	AC	C150, C151, C152	VCQYKU1HM182J	.0018MFD, 50V, ±5%, Mylar	AB
C214	VCEAAU1HW105Y	1MFD, 50V, +50 -10%	AB	C153, C154	VCQYKU1HM102J	.001MFD, 50V, ±5%, Mylar	AB
C215, C216	VCEAAU1HW105Y	1MFD, 50V, +50 -10%	AB	C155	VCQYKU1HM123J	.012MFD, 50V, ±5%, Mylar	AB
C217	RC-EZS337AF1H	330MFD, 50V, ±20%	AE				
C218	VCEAAU1EW336Y	33MFD, 25V, +50 -10%	AB				
C304	RC-EZS337AF1H	330MFD, 50V, ±20%	AE				
C305	RC-EZS476AF1J	47MFD, 63V, ±20%	AC				
C306	VCEAAU1EW106Y	10MFD, 25V, +50 -10%	AB				
C403	VCEAAU1EW106Y	10MFD, 25V, +50 -10%	AB				
C501, C502, C503	VCEAAU1HW105Y	1MFD, 50V, +50 -10%	AB				
C601, C602, C603, C604	RC-EZ1125AFZZ	8200MFD, 75V, +50 -10%	AY				
C605, C606, C607, C608	RC-EZ1058AFZZ	100MFD, 100V, ±20%	AH				
CAPACITORS							
C1, C2	VCFYSU1AB105K	1MFD, 100V, ±10%, Metalized Film					

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
C157, C158, C160, C161, C163, C164, C166, C167, C169, C170, C206, C209, C301, C302, C303, C401, C402, C504, C505, C609, C701, C702, △C901	VCQYKU1HM333J VCQYKU1HM333J VCQYKU1HM333J VCQYKU1HM333J VCQYKU1HM333J VCQYKU1HM333J VCQYKU1HM393J VCQYKU1HM393J VCQYKU1HM103M VCQYSH1HM102J VCMZYU1HC101J VCQYKU1HM223J VCQYKU1HM223K VCFYSU2JB103M RC-HZ064CAFZZ	.033MFD, 50V, ±5%, Mylar .033MFD, 50V, ±5%, Mylar .033MFD, 50V, ±5%, Mylar .033MFD, 50V, ±5%, Mylar .033MFD, 50V, ±5%, Mylar .039MFD, 50V, ±5%, Mylar .039MFD, 50V, ±5%, Mylar .01MFD, 50V, ±20%, Mylar 1000PF, 50V, ±5%, Mylar 100PF, 50V, ±5%, Mica .022MFD, 50V, +50 -10%, Mylar .022MFD, 50V, ±10%, Mylar .01MFD, 630V, ±20%, Metalized Film .047MFD, 250VAC, ±20%, Metalized Paper	AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AB AG	R37, R38, R39, R40, R41, R42, R43, R44, R45, R46, R47, R48, R49, R50, R51, R52, R53, R54, R55, R56, R57, R58, R61, R62, R63, R64, R65, R66, R67, R68, R69, R70, R71, R72, R73, R74, R75, R76, R77, R78, R79, R80, R81, R82, R83, R84, R101, R102, R103, R104, R105, R106, R107, R108, R109, R110, R112, R113, R114, R115, R116, R117, R118, R119, R120	VRD-ST2EE561J VRG-MU2EB221J RR-FZ1004AFZZ VRG-ST3AA3R3J VRD-ST2EE183J VRD-ST2EE103J VRG-MU2EB470J VRD-ST2EE183J VRD-ST2EE182J VRD-ST2EE563J VRG-ST2EA100J VRD-ST2EE221J VRG-ST3AA3R3J VRG-ST2EA100J VRD-ST2EE472J VRD-ST2EE330J VRD-ST2EE472J VRD-ST2EE473J VRD-ST2EE272J VRD-ST2EE105J VRD-ST2EE392J VRD-ST2EE473J VRD-ST2EE222J VRD-ST2EE105J VRD-ST2EE392J VRD-ST2EE393J VRD-ST2EE222J VRD-ST2EE155J VRD-ST2EE332J VRD-ST2EE333J VRD-ST2EE182J VRD-ST2EE684J VRD-ST2EE332J VRD-ST2EE333J	560 ohm 220 ohm, 1/4W, ±5%, Fusible .22 ohm, 5W, ±10%, Metal Plate (MPC74) 3.3 ohm, 1W, ±5%, Fusible 18K ohm 10K ohm 47 ohm, 1/4W, ±5%, Fusible 18K ohm 1.8K ohm 56K ohm 10 ohm, 1/4W, ±5%, Fusible 220 ohm 3.3 ohm, 1W, ±5%, Fusible 10 ohm, 1/4W, ±5%, Fusible 4.7K ohm 33 ohm 4.7K ohm 47K ohm 2.7K ohm 1Meg ohm 3.9K ohm 47K ohm 2.2K ohm 1Meg ohm 3.9K ohm 39K ohm 2.2K ohm 1.5Meg ohm 3.3K ohm 33K ohm 1.8K ohm 680K ohm 3.3K ohm 33K ohm	AD AD AC AB AD AD AB AD AB
RESISTORS							
(Unless otherwise specified resistors are 1/4W, ±5%, Carbon type)							
R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36	VRD-ST2EE223J VRD-ST2EE105J VRD-ST2EE105J VRD-ST2EE102J VRD-ST2EE684J VRD-ST2EE392J VRD-ST2EE823J VRD-ST2EE183J VRD-ST2EE822J VRD-ST2EE182J VRD-ST2EE221J VRD-ST2EE123J VRD-ST2EE472J VRG-MU2EB331J VRD-ST2EE822J VRD-ST2EE124J VRD-ST2EE822J	22K ohm 1Meg ohm 1Meg ohm 1K ohm 680K ohm 3.9K ohm 82K ohm 18K ohm 8.2K ohm 1.8K ohm 220 ohm 12K ohm 4.7K ohm 330 ohm, 1/4W, ±5%, Fusible 8.2K ohm 120K ohm 8.2K ohm					

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
R121	VRD-ST2EE182J	1.8K ohm		ΔR225	VRG-MU2EB471J	470 ohm, 1/4W, ±5%, Fusible	AD
R122	VRD-ST2EE684J	680K ohm		R226	VRD-ST2EE333J	33K ohm	
R123	VRD-ST2EE272J	2.7K ohm		R227	VRD-ST2EE273J	27K ohm	
R124	VRD-ST2EE273J	27K ohm		ΔR229	VRG-ST2EA100J	10 ohm, 1/4W, ±5%, Fusible	AD
R125	VRD-ST2EE152J	1.5K ohm		R230	VRD-ST2EE332J	3.3K ohm	
R126	VRD-ST2EE564J	560K ohm		R231, }	VRD-ST2EE333J	33K ohm	
R127	VRD-ST2EE222J	2.2K ohm		R232, }			
R128	VRD-ST2EE273J	27K ohm		R233 }			
R129	VRD-ST2EE122J	1.2K ohm		R234, }	VRS-PT3DB271K	270 ohm, 2W, ±10%, Metal Oxide Film	
R130	VRD-ST2EE474J	470K ohm		R235 }			
R131	VRD-ST2EE222J	2.2K ohm		R236	VRG-MU2EB560J	56 ohm, 1/4W, ±5%, Fusible	AD
R132	VRD-ST2EE223J	22K ohm		R237	VRD-ST2EE273J	27K ohm	
R133	VRD-ST2EE122J	1.2K ohm		R301	VRG-ST3AA1R0J	1 ohm, 1W, ±5%, Fusible	AC
R134	VRD-ST2EE474J	470K ohm		ΔR302 }	VRG-ST2HA1R0J	1 ohm, 1/2W, ±5%, Fusible	AB
R135	VRD-ST2EE182J	1.8K ohm		R303 }			
R136	VRD-ST2EE183J	18K ohm		R304 }		4.7 ohm, 1/4W, ±5%, Fusible	AB
R137	VRD-ST2EE102J	1K ohm		R305	VRD-ST2EE330J		
R138	VRD-ST2EE394J	390K ohm		R306	VRD-ST2EE122J	1.2K ohm	
R139	VRD-ST2EE102J	1K ohm		R307	VRD-ST2EE153J	15K ohm	
R140	VRD-ST2DE822J	8.2K ohm		R308, }	VRD-ST2EE124J	120K ohm	
R141	VRD-ST2EE471J	470 ohm		R309 }			
R142	VRD-ST2EE184J	180K ohm		R310	VRD-ST2EE222J	2.2K ohm	
R143, }	VRD-ST2EE681J	680 ohm		R311	VRD-ST2EE224J	220K ohm	
R144 }				R312	VRD-ST2EE223J	22K ohm	
R145	VRD-ST2EE821J	820 ohm		R313, }	VRD-ST2EE393J	39K ohm	
R146, }	VRD-ST2EE681J	680 ohm		R314 }			
R147 }				R401	VRD-ST2EE153J	15K ohm	
R148	VRD-ST2EE821J	820 ohm		R402	VRD-ST2EE474J	470K ohm	
R149, }	VRD-ST2EE681J	680 ohm		R403, }	VRD-ST2EE473J	47K ohm	
R150 }				R404 }			
R151	VRD-ST2EE821J	820 ohm		R405	VRD-ST2EE103J	10K ohm	
R152, }	VRD-ST2EE681J	680 ohm		R406	VRD-ST2EE104J	100K ohm	
R153 }				R407	VRD-ST2EE103J	10K ohm	
R154	VRD-ST2EE821J	820 ohm		R408, }	VRD-ST2EE473J	47K ohm	
R155, }	VRD-ST2EE681J	680 ohm		R409 }			
R156 }				R410	VRD-ST2EE331J	330 ohm	
R157	VRD-ST2EE821J	820 ohm		R411	VRD-ST2EE104J	100K ohm	
R158, }	VRG-MU2EB101J	100 ohm, 1/4W, ±5%, Fusible	AD	R501, }	VRD-ST2EE333J	33K ohm	
R159 }				R502 }			
R201	VRD-ST2EE103J	10K ohm		R503	VRD-ST2EE681J	680 ohm	
R202	VRD-ST2EE183J	18K ohm		R504	VRD-ST2EE332J	3.3K ohm	
R203	VRD-ST2HD820J	82 ohm, 1/2W, ±5%		R601, }	VRD-ST2HD822J	8.2K ohm 1/2W, ±5%	
R204	VRS-PT3AB820K	82 ohm, 1W, ±10%, Metal Oxide Film		R602, }			
				R603, }			
				R604 }			
R205	VRD-ST2EE682J	6.8K ohm		R703	VRG-ST3AA3R3J	3.3 ohm, 1W, ±5%, Fusible	AB
R206	VRD-ST2EE273J	27K ohm		ΔR704 }			
R207	VRS-PT3DB561K	560 ohm, 2W, ±10%, Metal Oxide Film		R705, }			
				R706 }			
R208	VRD-ST2EE393J	39K ohm		R707	RR-WZ1004AFZZ	3.3 ohm, 10W, ±10%, Cement (RGB10PH)	AD
R209	VRD-ST2EE333J	33K ohm					
R210, }	VRD-ST2EE123J	12K ohm					
R211 }							
R212	VRD-ST2EE473J	47K ohm					
R213, }	VRD-ST2EE472J	4.7K ohm					
R214 }							
R215	VRD-ST2EE473J	47K ohm					
R216	VRD-ST2EE124J	120K ohm					
R217	VRD-ST2EE470J	47 ohm					
R218	VRD-ST2EE122J	1.2K ohm					
R219	VRD-ST2EE221J	220 ohm					
R220, }	VRD-ST2EE222J	2.2K ohm					
R221 }							
R222	VRD-ST2EE183J	18K ohm					
R223	VRD-ST2EE103J	10K ohm					
R224	VRD-ST2EE332J	3.3K ohm					

MISCELLANEOUS

1	GCAB-3080AFSA	Cabinet	AY
2	GFTAU3087AFZZ	Lid, Bottom (Small)	AH
3	GFTAU3088AFZZ	Lid, Bottom (Large)	AN
4	GLEGP0065AF00	Leg, Outer	AB
5	GLEGP0066AF00	Leg, Inner	AA
6	HDALP0426AFSA	Dial Scale	AS
7	HDECA0343AFSA	Bracket, L.E.D. (Light Emitting Diode)	AF
8	HDECA0344AFSA	Bracket, Dial Scale Retaining	AL

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
9	HPNLC3398AFSA	Panel, Front (SX-9100H)	BB	37	LHLDW1068AFZZ	Nylon Band, 100mm	AA
	PSPAS0084AFSA	Spacer, Push Switch Knobs	AA	38	LHLDW1075AFZZ	Nylon Band, 60mm	AA
	GMADZ0055AFSA	Window (Large)	AS	39	LHLDW9003CEZZ	Wire Holder	AA
	GMADZ0056AFSA	Window (Small)	AP	40	LX-BZ0261AFFD	Screw, Front Panel Retaining	AA
	PCUSG0098AF00	Cushion, 50mm x 10mm x 1mm	AB	41	LX-HZ0069AFFD	Screw, Power Transformer Retaining	
	PCUSG0099AF00	Cushion, 42mm x 4mm x 2mm	AA	42	LX-LZ0051AF00	Push Rivet	
	PSPAS0080AFSA	Spacer, Power Switch	AB	43	LX-LZ0056AFZZ	Rivet, Fuse Holder Bracket Retaining	
	HPNLC3398AFSB	Panel, Front (SX-9100HB)	BB	44	LX-NZ0122AFFD	Nut, Power Transformer Retaining	AA
	PSPAS0084AFSB	Spacer, Push Switch Knobs	AA	45	LX-WZ0565AGFE	Lock Washer, Fuse Holder	AA
	GMADZ0055AFSA	Window (Large)	AR	46	PCOVU3121AFZZ	Bracket, Lamp Cover	AC
	GMADZ0056AFSA	Window (Small)	AN	47	PCOVW7109AFZZ	Cover, Power Switch	AB
	PCUSG0098AF00	Cushion, 50mm x 10mm x 1mm	AB	48	PCOVZ8056AFSA	Cover, Lamp	AB
	PCUSG0099AF00	Cushion, 42mm x 4mm x 2mm	AA	49	PFILW0011AFZZ	Filter Plate	AK
	PSPAS0080AFSB	Spacer, Power Switch	AB	50	PFLT-0330AF00	Felt, Cabinet	AA
	JKNBM0297AFSA	Knob, Power Switch (SX-9100H)	AD	51	PGUMM0137AFZZ	Holder, L.E.D., Rubber	AF
10	JKNBM0297AFSB	Knob, Power Switch (SX-9100HB)	AD	52	PGUMM0139AF00	Cushion, 22mm Dia. x 15.5mm Dia. x 2.2mm, Outer Leg	AA
	JKNBM0298AFSA	Knob, Push Switch (SX-9100H)	AD	53	PRDAR0204AFZZ	Heat Pipe, Power Transistor	BH
11	JKNBM0298AFSB	Knob, Push Switch (SX-9100HB)	AD	54	PRDAR0215AFZZ	Heat Sink	AB
12	LANGF0516AFZZ	Bracket, Right Hand Side	AG	55	PSPAN0054AFZZ	Spacer, Nylon	AB
13	LANGF0517AFZZ	Bracket, Left Hand Side	AG	56	PSPAN0056AFZZ	Spacer, Power Amplifier Printed Wiring Board	
14	LANGG0066AFZZ	Lever, Power Switch	AD	57	PSPAN0057AFZZ	Spacer, Power Amplifier Printed Wiring Board	
15	LANGQ0650AFZZ	Bracket, Headphones Jack	AB	58	PSPAZ0085AFZZ	Spacer, Power Transistor	AF
16	LANGQ0652AFZZ	Bracket, Power Switch	AB	59	PSPAZ9004AGZZ	Spacer, Transistor	AA
	LANGQ0700AFSA	Bracket, Terminals & Jacks (SX-9100H)	AQ	60	QACCL0051AFZZ	Main Supply Cord, For Users in Australia	AP
17	LANGQ0700AFSB	Bracket, Terminals & Jacks (SX-9100HB)	AQ	61	QACCS0051AF00	Main Supply Cord	AM
18	LANGQ0701AFZZ	Bracket, Fuse Holder & Main Voltage Selector Switch	AD	62	QACCZ0002TA0F	Main Supply Cord	AG
19	LANGR0483AFZZ	Bracket, Dial Scale	AL	63	QACCZ0052AF00	Main Supply Cord	AP
20	LANGT0859AFZZ	Bracket, Power Transformer	AQ	64	QACCZ0053AF00	Main Supply Cord	AK
21	LANGT0860AFZZ	Bracket, Printed Wiring Board	AC	65	QCNW-0591AFZZ	Connecting Cable	AU
22	LANGT0861AFZZ	Bracket, Fluorescent Lighting Tube	AH	66	QFSPH1001AGZZ	Holder Fuse	AG
23	LANGT0862AFZZ	Bracket, Front Panel Retaining	AC	67	QHWS-0001CEFN	Earth Terminal	
24	LANGT0879AFZZ	Bracket, Power Rectifier (D601, D602), Retaining	AB	68	QLUGP0104AGZZ	Terminal, Tip	AA
25	LANGT0889AFZZ	Bracket, Relay Circuit Printed Wiring Board Retaining	AD	69	QLUGP0111CEFW	Terminal, Tip, 13mm	AA
26	LANGT0890AFZZ	Bracket, Power Supply Circuit Printed Wiring Board Retaining	AB	70	QLUGP9052AFZZ	Terminal, Tip	AA
27	LANGT0899AFZZ	Bracket, Printed Wiring Board Retaining	AC	SO1 (A-D)	QSOCJ0475AFZZ	Socket Assembly (Gold Plating) SO1-A: Direct inputs (L-ch) SO1-B: Direct inputs (R-ch) SO1-C: 10Hz inputs (L-ch) SO1-D: 10Hz inputs (R-ch)	AH
28	LANGT0916AFZZ	Bracket, Power Amplifier Printed Wiring Board Retaining	AE	CNP201	QCNCM259JAFZZ	Plug, 9 pin	AD
29	LANGT0917AFZZ	Bracket, Power Amplifier Printed Wiring Board Retaining	AB	CNP202	QCNCM094CAFZZ	Plug, 3 pin	AB
30	LANGT0918AFZZ	Bracket, Constant Voltage Circuit Printed Wiring Board Retaining	AE	CNP203	QCNCM184EAFZZ	Plug, 5 pin	AC
31	LBSHC0004AGZZ	Bushing, Main Supply Cord	AB	CNP204	QCNCM233DAFZZ	Plug, 4 pin	AC
32	LBSHC0007AFZZ	Bushing, Main Supply Cord	AB	CNP205	QCNCM133GAFZZ	Plug, 7 pin	AD
33	LHLDP3062AFZZ	Holder, Dial Illumination Lamp (PL301)	AC	CNP301	QCNCM132FAFZZ	Plug, 6 pin	AD
34	LHLDP8004AF00	Holder, Power/Protection Indicator	AC	CNP302	QCNCM184EAFZZ	Plug, 5 pin	AC
35	LHLD51052AF00	Guide, Power Switch Lever	AB	CNP303	QCNCM233DAFZZ	Plug, 4 pin	AC
36	LHLDW1052AFZZ	Nylon Band	AA	CNP401	QCNCM331LAFZZ	Plug, 11 pin	AF
				CNP501	QCNCM328HAFZZ	Plug, 8 pin	AE
				CNS201	QCNCW166JAFZZ	Socket, 9 pin (Housing Only)	AB
				CNS202	QCNCW086CAFZZ	Socket, 3 pin (Housing Only)	AA
				CNS203	QCNCW155EAFZZ	Socket, 5 pin (Housing Only)	AB
				CNS204	QCNCW164DAFZZ	Socket, 4 pin (Housing Only)	AA
				CNS205	QCNCW104GAFZZ	Socket, 7 pin (Housing Only)	AB
				CNS301	QCNCW103FAFZZ	Socket, 6 pin (Housing Only)	AB
				CNS302	QCNCW155EAFZZ	Socket, 5 pin (Housing Only)	AB
				CNS303	QCNCW164DAFZZ	Socket, 4 pin (Housing Only)	AA
				CNS401	QCNCW106LAFZZ	Socket, 11 pin (Housing Only)	AC

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE	REF. NO.	PART NO.	DESCRIPTION	CODE
CNS501	QCNCW105HAFZZ	Socket, 8 pin (Housing Only)	AB	PSPAG0075AFZZ	Cushion, 10mm x 6mm x 6mm	AA	
△ F901	QFS-C502CAGNI	Fuse, T2.5A (220/240V)	AE	PSPAG0076AFZZ	Cushion, 9.8mm x 6mm x 4.8mm		
F902	QFS-C252CAGNI	Fuse, T5.0A (110V)	AE				
SW301, SW302, SW303, SW304, SW305	QSW-P0233AFZZ	Switch Assembly	AP	PSPO-0060AFZZ	Cushion, 60mm x 20mm x 6mm		
		SW301 (a. b); Speakers selector "a" switch		PSPO-0061AFZZ	Cushion, 45mm x 20mm x 5mm		
		SW302 (a. b); Speakers selector "b" switch		QTIPZ0002SGZZ	Tip, Socket	AA	
		SW303 (a. b); Audio spectrum indication selector "left" switch		SPAKA0586AFZZ	Cushion, Packing, Bottom	AR	
		SW304 (a. b); Audio spectrum indication selector "right" switch		SPAKA0587AFZZ	Cushion, Packing, Top	AR	
		SW305 (a. b); Audio spectrum indication selector "level-20dB" switch		SPAKC1344AFZZ	Individual Carton (SO-9100H)	AN	
				SPAKC1362AFZZ	Individual Carton (SO-9100HB)	AP	
				SSAKH0022AGZZ	Sheet, Mains Supply Cord	AB	
				SSAKH0007SEZZ	Bag, Operation Manual	AA	
				TCAUA0200AFZZ	Caution Sheet, Fuse (2.5A) with Pouch		
				TCAUA0201AFZZ	Caution Sheet, Fuse (5.0A) with Pouch		
				TCAUS0076AFZZ	Caution Label, Bottom Lid		
				TCAUS0052AFZZ	Caution Label, Bottom Lid		
				TINSZ0174AFZZ	Operation Manual	AQ	
				TMAPC0595AFZZ	Schematic Diagram		
SW901	QSW-P0158AFZZ	Switch, Power ON/OFF	AL	P.W.B. ASSEMBLY (Not replacement item)			
△ (a. b)				DUNTMO066AF02	Power Amplifier Circuit	BW	
SW902	QSOCE0559AFZZ	Switch, Mains Voltage Selector	AL	(Combined assembly)			
TM801	QTANN0459AFZZ	Terminal, Speaker R-ch	AQ	DUNTA0092AF01	Power Rectifier Circuit	BQ	
TM801	QTANN0459AFZZ	Terminal, Speaker L-ch	AQ	DUNTZ0354AF01	Audio Spectrum Indicator Driver	BM	
PL301	RLMPP0058AFZZ	Lamp, Illumination	AD				
J301	QJAKJ0070AFZZ	Headphone Socket	AF	DUNTZ0356AF02	Output Power Indicator Driver	BC	
	PCOVU9106AFZZ	Cushion, 50mm x 17mm x 5mm	AA	DUNTLO106AF02	Audio Spectrum Indicator	BU	
	PCUSF0012AF00	Cushion, 38mm x 5mm x 0.45mm	AA	(Combined assembly)	Circuit, Output Power Indicator Circuit, Headphone Circuit, Constant Voltage Circuit, Switch Indicator Circuit		
	PFLT-0379AF00	Felt, 78mm x 24mm, Push Switch	AB				
	PGUMS0137AF00	Cushion, 13.5mm x 10mm x 6mm					

P.W.B. ASSEMBLY (Not replacement item)

DUNTM0066AF02	Power Amplifier Circuit	BW
(Combined assembly)		
DUNTA0092AF01	Power Rectifier Circuit	BQ
DUNTZ0354AF01	Audio Spectrum Indicator Driver	BM
DUNTZ0356AF02	Output Power Indicator Driver	BC
DUNTLO106AF02	Audio Spectrum Indicator Circuit, Output Power Indicator Circuit, Headphone Circuit, Constant Voltage Circuit, Switch Indicator Circuit	BU
(Combined assembly)		